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CASE STUDY:

AMS Capital & Philips Lighting: Will de Vries be the Genius of the Lamp?

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Abstract

The following case-study reports the situation involving Royal Philips, Philips Lighting and the fictitious Hedge Fund AMS Capital Portfolio Manager, Luuk de Vries, as of May, 2016. The structure is divided between the case story and a teaching note. Present in the case story, the events involving the three parties until Philips Lighting is carved-out from Royal Philips and listed trough an IPO are reported. The teaching note intends to tackle de Vries' question of buying or not on the IPO and to understand the reasoning behind carving-out. The teaching note closes favouring the buy and flip the stock strategy.

Key words: Royal Philips; Carve-Out; Initial Public Offering; Philips Lighting

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AMS Capital & Philips Lighting: Will de Vries be the Genius of the Lamp?

April 25th, 2016, 7 a.m. and Luuk de Vries, recent Portfolio Manager hired by AMS Capital, a Dutch hedge fund, was already reading Financial Times seeking for new investment opportunities. AMS Capital was recently registering poor results in its investments and de Vries wanted to leverage his reputation within the fund by proposing an excellent investment opportunity. While rushing through the newspaper, he stared at the following heading: "Philips likely to list its lighting business: Spin-off is consistent with plans to simplify the once-sprawling Dutch conglomerate". De Vries had expertise in the M&A world, especially in transactions such as spin-offs, divestitures and other restructurings. He proceeded to read the news:

"Philips is close to floating its lighting unit after management at the Dutch conglomerate admitted that an initial public offering was "more likely" than a hoped-for sale to a trade buyer. Philips' shares fell 5.5 per cent on Monday after it reported a sharp fall in net income for the first quarter of this year, mainly due to one-off tax charges related to the planned spin-off. The company had considered selling its lighting unit — which analysts estimate to be worth up to €5.5bn — over the past year as part of plans to slim down the conglomerate and focus on its healthcare business. Management said for the first time on Monday that an IPO was now the probable option, although negotiations with potential purchasers are still ongoing."

April 25, 2016, Financial Times

By the time he had finished reading the news, he was sure that this could be the chance to put back on track AMS Capital. He had approximately one month to gather all the information necessary to prove and convince Vincent Schuuring, Chief Investement Officer of AMS Capital, that this could be the great opportunity.

Philips' journey: From light revolution to technology disruption

During Industrial Revolution's era, light bulbs industry was undoubtedly growing fast and so were Gerard Philips' experiments in making reliable carbon filament lamps. Grounded on this, and moved by innovation and entrepreneurship, in 1891, Frederik Philips and his son, Gerard Philips, purchased a small factory in Eindhoven, the Netherlands[i]. It was there where Philips & Co. started and where Frederik and Gerard Philips could offer light bulbs to everyone who needed them. Philips rapidly became one of the largest producers of carbon-filament lamps in Europe and was pretty much focused on exportation.

In September 11, 1912, Philips & Co went public and its shares started being publicly traded at the Amsterdam Stock Exchange. After the IPO, the initial limited partnership named Philips & Co was from that moment on a limited liability company whose name changed to N.V. Philips' Gloeilampenfabrieken.

Philips' business quickly started expanding to new areas. Frederik Philips sent an advertisement to the newspaper asking for a "capable young scientist with a doctorate in physics"[ii]. The purpose of that initial expansion was to study physical and chemical phenomena and stimulate product innovation. Until that time, Philips' strategy did not rely on creating new original ideas but rather on developing and improving already existing inventions. It happens that, by 1912, patent law protection was re-introduced in the Netherlands[iii], which complicated and wagged the bases where Philip's business strategy relied on until then. For that precise reason, Philips had to invent, create and diversify.

It was in 1918, when Philips introduced the medical X-ray tube in the market, signalling the beginning of the diversification of Philips' products. By that time, their products would widely range from X-ray radiation to radio reception. As of the 1920's, Royal Philips was established as the primary holding company. In 1932, Philips was already the largest manufacturer of radios

worldwide and seven years later, in 1939, Philips was launching the pioneering rotary electric shaver[iv]. But the greatest years of technological breakthroughs for Philips would start in the post-World War II years, between the 40's and the 70's. In 1949 Philips stepped into the medicine field, introducing the Philips Synchrocyclotron, enabling research into the treatment of malignant tumours. Years later, in 1972, Philips decided to list itself also in the New York Stock Exchange.

Philips innovation path was just in the beginning. The company stepped in the 70's betting in the processing, storage and transmission of images, sound and data. But alongside the organic growth it was experiencing, Philips also started relying on inorganic growth through acquisitions. In 1974, Philips acquired Magnavox, a North American factory of electronic devices such as radios and televisions and in the following years more acquisitions took place: Signetics (1975), GTE Sylvania (1981) and Westinghouse (1983). The result of such investment in the industry of sound, image and data was the launch of the Compact Disc (CD) in 1983. However, when trying to introduce the CD-Interactive for television, the project failed, leading Philips to register losses of $2.7 billion in 1990 and $500 million in 1993[v]. The major cause for such financial fall was the big competition Philips was facing in the audio and video industry especially from Matsushita and Sony.

Thus, in the 90's, Philips' business strategy changed significantly[vi]. Philips narrowed the number of areas in which it operated, focusing more on the healthcare industry. By 1988 Philips was registering annual revenues of €25.447 billion and reached its peak in 2000 with €37.862 billion[vii] (see **Exhibit 1&2** for Philips' revenues and stock performance). In 2005, Philips acquired Stentor, a provider of picture archiving and communication systems that would ultimately help storing, managing and distributing digital radiology images throughout hospitals and healthcare facilities, but also divested in certain businesses related to lighting, such as TSMC (Taiwan Semiconductor Manufacturing Company), and to image and sound such

as the IT company Atos Origin and Great Nordic. These spin-offs ended up being a success for the investors who invested in them at the very start[viii].

Focusing on healthcare allowed Philips to launch in 2006 the first 3D scanner in order to further enhance image quality of CT scans. Along with this, Philips also started searching for solutions to minimally-invasive surgeries. As stated in Philips' 2008 Annual Report[ix], "*Philips continued its journey to become a health and well-being company*". From the total acquisitions' integration and purchase accounting charges of €146 million in 2008, €95 million were just from the healthcare segment[x].

As of 2015, Koninklijke Philips N.V. (or Royal Philips), the holding company of the Philips Group, was still present in four segments: healthcare, lighting, consumer lifestyle and innovation, group and services. The group employed approximately 113,959 employees[xi] and was present in more than 100 countries totalling an Enterprise Value of €25.707 billion. In that same financial year, Philips registered revenues of € 24.244 billion (an increase of 13.3% over the financial year of 2014) and an EBITDA of €3.139 billion (see **Exhibits 3, 4, 5 & 6** for Royal Philips historical financial statements). The contribution of each segment to the overall Philips' financial performance in 2015 was mostly driven by the healthcare business. The healthcare segment contributed with €10.912 billion in sales (increased 18.8% from previous financial year), followed by the lightning sector totalling €7.411 billion in revenues (increased 7.9% from previous financial year), the consumer lifestyle segment contributing with €5.347 billion (increased 13% from previous financial year) and finally the innovation, group and services which recorded revenues of €574 million (increased 5.1% from previous financial year) (see **Exhibit 7** for operational segmentation **& 8** for Philips Group 2015 equity and debt composition as well as market conditions)[xii].

AMS Capital

Luuk de Vries started his career at the age of 22 when he was admitted at Goldman Sachs in Amsterdam as an M&A analyst. During his journey there, he was able to get into several projects related to spin-offs, divestitures and some other restructurings. De Vries stayed there for ten years and the learning and knowledge he retrieved from his first job were immense. Despite being successful at his job and being passionate about the M&A world, de Vries wanted to try something new where he could possibly add value with his knowledge. In January 2016, at the age of 32, de Vries was hired as Portfolio Manager at AMS Capital, a hedge fund headquartered in Amsterdam. AMS Capital main strategy was to usually invest in distressed companies on the verge of bankruptcy by buying the company's junk bonds at a very low price and selling them at a much higher price or alternatively, becoming a shareholder of the company after the restructuring process.

AMS Capital had been for years a renowned player in the Dutch hedge fund industry but in more recent years had been struggling for positive performance results. De Vries had just landed in his new job and the last thing he wanted was to work in a place with decaying reputation. Hence, he started looking in the market for good investment opportunities that could potentially leverage again AMS Capital reputation in the Dutch hedge fund industry. However, a bad recommendation could be critical for de Vries' reputation.

When rushing through all the news, he read that Royal Philips was about to carve-out and list its lighting business, through an IPO, by mid-2016. This move was frequently named by the press as a spin-off, but in fact, it was more similar to an equity carve-out. From his knowledge in spin-offs, he knew that shares of spun-off companies tended to perform very well and were a good source of short-term profits. To re-assure himself that he was right, he rushed to his Bloomberg terminal to see the past performances of spin-offs (see **Exhibit 9**). The results were

along with what most studies find: spun-off companies out-perform the market[xiii]. De Vries also knew that this investment was not in line with the usual investment policy of AMS Capital but would the investment become a success and he would for sure be promoted in the near future. It was then time to convince the Chief Investment Officer, Vincent Schuuring, to invest in Philips Lighting shares.

Light and Lighting Bulbs Industry

It goes back to the 1870's when the first experiments, to build a lighting bulb, conducted by Thomas Edison and Joseph Swan took place. Throughout the years, the main goal within this industry was to constantly develop and create new methods to build more efficient light bulbs that could last longer at a lower production cost. This market grew and innovated itself at a high pace. From fluorescent lamps to compact fluorescent lamps (CFL) the market was expanding to satisfy the needs of a growing population. When stepping into the 21st century, one of the fastest develop lighting technologies was the light-emitting diode (LED) bulb[xiv]. It presented itself as the most efficient light on the market (see **Exhibit 10** for comparison of different types of light bulbs)[xv]. Despite being a growing industry, customers were sensitive to prices. In mid-1980's, the first CFLs introduced in the market were being sold at retail prices of $25-35 which made consumers react very negatively. Only after almost 30 years later would new CFL bulbs be created and be sold at a unitary cost of $1.74.

Since previous years that was quite clear to see that the global lighting market had a positive high correlation with the global GDP (see **Exhibit 11**)[xvi] which to a certain extent helped to better understand the future of this industry. Whereas the conventional lamps industry showed to be a consolidated industry with major players being General Electrics, Osram and Philips[xvii], the LED lighting market presented itself to be a very dynamic one with fierce competition from Asian countries. In recent years, countries worldwide had been adopting political measures in

what regarded specific technologies in the lighting market. The EU began to accelerate the switchover to more ecological lighting sources by extending its regulations to ban low-voltage halogen lamps[xviii]. That posed a risk to the future of traditional lighting bulbs in the market.

By 2010, the overall lighting market registered approximately $99 billion in revenues and four years later, in 2014, registered $112 billion. The main growth drivers, in geographic terms, were China and Latin America accounting in 2014 for approximately 70% of the market share. The same analysis was applied to the lamp market (a sub-sector of the lighting market) that had revenues of approximately $15 billion and two years later saw its value increase to approximately $17 billion (see **Exhibit 12** for the outlook of both the Lighting and Lamp markets)[xix]. Despite such increase, the fact that modern lamps could last much longer was causing a reduction in the number of times a customer had to switch lamps. Furthermore, the LED sector was experiencing a price erosion[xx] where prices were expected to drop from €4.52 in 2014 to €2.26 in 2020 (a 50% drop)[xxi]. Revenues in the lighting sector were forecasted to grow at 3% annually mainly driven by LED-based solutions[xxii].

As of 2016 the lighting market had a broad range of products: conventional lamps (incandescent, halogen, fluorescent and HID lamps); LED lamps; Luminaires (electrical devices that produce, control and distribute light); Electronics (units which regulate the current going through a light source); lighting systems (combination of luminaires, controls and software) and other lighting systems[xxiii].

Healthcare Industry

The growth this sector was experiencing was immense, especially due to its combination with technology (*healthtech*) and by 2002, its worldwide market size was approximately $304.606 billion[xxiv]. The Healthcare industry presented to be very capital intensive as the total spending in this sector accounted for 10.4% of the total world GDP in 2015, which corresponded to

approximately $7 trillion[xxv]. Alongside the sector's growth, M&A activity in this sector was also rising (see **Exhibit 13** for related big deals). In the past recent years, it had been observed that chronic diseases were rising with special focus to cardiovascular, cancer and respiratory diseases. Life expectancy had been increasing, causing bigger efforts and investments to treat more and more citizens. Reaching 2016, the major trends in the healthcare industry were the rising drugs' prices (rise of 9% in generics in 2014), the business consolidation through numerous mergers (following the trend of 2015), the appearance of health apps such as Teladoc which saw its membership increase from 1.9 million in 2013 to 8.1 million in 2014, derived from the market penetration of health apps, cybersecurity was becoming more important than ever and finally, more and more, healthcare was becoming a political aspect especially between republicans and democrats in the USA[xxvi].

In 2016, this sector reached a market size of $703.647 billion, reflecting a growth rate of 131% between 2002 and 2016 (see **Exhibit 14**)[xxvii]. Even though, this sector was still in need for more innovation and, as of 2016, governments, health plans and life science companies were experiencing higher costs with inconsistent results[xxviii].

Philips plans to split itself in two:

It was September 2014, and Philips took the strategic decision to sell its lighting business[xxix]. The Dutch Conglomerate announced its interest in splitting Philips into two companies: one focused on healthcare and technology (*healthtech*), and the other one on lighting[xxx]. The group believed each sector had its particular customer needs, trends and value drivers. According to Philips, the management team was still trying to figure out if an IPO would be more beneficial or not for shareholder value creation than a direct sale to an investor[xxxi]:

"I do appreciate the magnitude of the decision we are taking, but the time is right to take the next strategic step for Philips, as we continue on our transformation, to become the

global leader in HealthTech and shape the future of the industry, we will combine our vibrant Healthcare and Consumer Lifestyle businesses into one company. At the same time, giving independence to our Lighting solutions business will better enable it to expand its global leadership position and venture into adjacent market opportunities."

Frans van Houten, Royal Philips CEO, London meeting, Sep. 2014

Philips' shares had been underperforming the market and were down 9% in 2014. After becoming public Philips' intention to sell its lighting business, its shares rose to €24.07 in Amsterdam[xxxii], reflecting an increase of approximately 4%.

Philips had already previous intentions to divest the lighting business. As of 2014, Royal Philips combined the Philips Lumileds LED components and automotive lighting components operations into a stand-alone company[xxxiii]. Plus, Philips tried to sell an 80.1% stake of Lumileds to a consortium led by GO Scale Capital, a Chinese investment fund, which was offering $2.9 billion for the business stake[xxxiv]. Despite strong efforts by both parties to seal the deal, the US authorities did not authorize the sale[xxxv]. According to Philips, the company was not allowed to disclose the real reasons for such deny by the Committee on Foreign Investment in the United States (CFIUS), despite the major publicly known cause being concerns with national security[xxxvi]. Such failure in the sale of Lumileds acted as a sort of repellent for potential buyers for the lighting business[xxxvii]. Hence, only after more than half a year did Philips announced the IPO, after failing to find a buyer[xxxviii].

The separation was publicly announced on the 12th of March 2015, when Frans van Houten, Philips' CEO and Chairman of the Board of Management since 2011, announced that Philips was planning to sell its lightning business to the public through an IPO on Euronext Amsterdam which would take place the following year[xxxix]. Despite becoming two separate distinct companies, both (Royal Philips Electronics and Philips Lighting) would launch new products

under the same brand: Philips. A brand that had strong reputation and that in 2015, for the fourth year in a row, was considered the most preferred one in LED lighting globally, both in professional and consumer categories[xl].

After the split, Royal Philips would run the Healthcare and Consumer Lifestyle businesses alone, while Philips Lighting would run separately the lighting business with four main different business groups: BG Lamps (the one corresponding to traditional lamps), BG LED, BG Professional and BG Home. However, the Lumileds would still continue to be part of Royal Philips. The parent company wanted to seek other strategic options to attract capital from third party investors for Lumileds[xli]. Thus, any transaction related to that business would go for the account of Royal Philips[xlii]. Despite a separation from the lighting business and Lumileds, both entities established a strategic partnership and supply agreement[1] whereby one was supplier of each other (Lumileds would supply LED components and Philips Lighting would supply other lighting components)[xliii].

The market participants debated on the reasons behind the split. Frans van Houten assured that, first of all, the proceeds from the IPO would be used to finance the growth on the healthcare business[xliv]. Secondly, that sale could help to eliminate the so well-known conglomerate discount, benefiting Philips's future valuations. Hans Slob, Rabobank analyst, corroborated saying *"it will eliminate the conglomerate discount, I always used a 5 percent discount for the sum of the parts valuation"*[xlv].

According to what was agreed in a shareholder circular, Philips would initially only offer a minority interest of 25% (37.5 million shares) in the IPO followed by more future offers which would ultimately lead to a total divestment of the lighting business[xlvi] (see **Exhibit 15** for Royal

[1] *The agreement contains a purchase commitment whereby Philips Lighting is entitled of purchasing from Lumileds at least 60% of its actual spend in LED components for a period of four years beginning in February 1st, 2016. The price was provided "inter alia" meaning that the price had to be equal or below the prices practiced by other relevant suppliers. Under the case where the price is higher than the competitors', there is another separate compensation agreement between Philips Lighting and Royal Philips.*

Philips' structure after the IPO). On February 1st, 2016, occurred the "*Separation Date"* between the selling shareholder and the newly named company Philips Lighting Holding B.V., the holding company of Philips Lighting. It allocated assets, liabilities, employees and contracts of the former Royal Philips between the new Royal Philips and Philips Lighting. With the separation, however, a "Relationship Agreement" will be binding the two companies[xlvii] (see **Exhibit 16 & 17** for governance structure and the relationship agreement).

"Today's announcement is an historic one for Philips as we aim to separate our company into two market-leading companies focused on capturing opportunities in health technology and connected LED lighting solutions markets, respectively. We believe that the recent performance of both companies demonstrates that the fundamentals are in place for long-term profitable growth and that Philips Lighting is well positioned for success as a stand-alone company".

Frans van Houten, Royal Philips CEO, Philips Lighting ITF Press Release

Philips Lighting

Philips Lighting reported in the year end of 2015 an EBITDA of €646 million[2] and its EBIT amounted to €331 million for the same period (see **Exhibit 18 & 19** for Philips Lighting historical financial statements). Philips Lighting seemed to be well positioned in the sector as the average EBITDA of the industry was €302.91 million[3] (see **Exhibit 20, 21 & 22** for peers' performance and also Royal Philips' peers)[xlviii]. By the time of the IPO, Philips Lighting was expected to have a net financial debt of €950 million which would represent approximately 1.5x 2015 EBITDA[4], a multiple way above the sector average of 0.5x EBITDA. The company was

[2] *The company defines EBITDA as income from operations excluding depreciation, amortization, and impairments of non-financial assets.*

[3] *The average EBITDA of the industry was calculated through a weighted average (by Market Cap) of the Bloomberg referenced competitors EBITDAs.*

[4] *Philips Lighting realised an EBITDA of €646 million for the year ended 31 December 2015. The ratio assumes approximately €300 million of cash on balance sheet post completion of the Offering.*

targeting an annual dividend pay-out ratio from 40% to 50% of the continuing net income[5] which would be paid out annually in cash starting in 2017[xlix].

Philips Lighting had been investing heavily in *R&D* to stay at the forefront of technologic advances. As so, in 31 December 2015, it registered expenses in *R&D* of 4.9% of its sales[l]. Consequently, by the end of 2015, the group had 14,000 patents, a number well above its competitors. Philips Lighting, in line with Royal Philips' overall growth strategy, was also betting on inorganic growth acquiring other companies. As of the end of 2014, Philips had invested €248 million compared to €178 million in 2013. By the end of 2015, cash for investing activities amounted to €65 million (see **Exhibit 23** for Philips Lighting Cash Flow Statement).

In the first quarter of 2016, BG Lamps unit accounted for most part of the sales amounting to €615 million, a substantial higher sales value compared to BG LED with almost half of the size with €355 million in sales (see **Exhibit 24**). As per geographical cluster, sales in Philips Lighting have been shifting moderately (see **Exhibit 25** for sales by geographical cluster).

As most of its sales were from lamps and not LED's, Philips had a problem to solve and it was urgent. The manufacturing plants Philips Lighting had by 2015 were predominately for conventional lamps which differed significantly from the ones required for LED lamps. From a total of 60 manufacturing plants in 2008, Philips Lighting was able to reduce its 45 manufacturing plants for traditional lamps to 21 in 2015[li]. For such to happen, Philips had to incur in restructuring costs amounting €261 million in the year end of 2014 and €90 million by the end of 2015. This restructure of manufacturing plants would potentially result in additional future restructuring costs related to depreciation and impairments, environmental concerns and transfer and dismissal of employees.

[5] *Continuing net income is defined as recurring net income from continuing operations, or net income excluding discontinued operations and excluding material non-recurring items.*

Analysing the opportunity: would it be worth?

After reading the news, de Vries started searching and analysing the lighting market as well as Philips Lighting overall performance. Days later, he recalled that Siemens, one of Philips' main competitors, had also divested its lighting business, Osram, back in July 2013. It was time for de Vries to gather some info on the past performance of Osram shares. Overall, M&A activity in the lighting market was high as industry players wanted to build scale as the market advanced towards intelligent lighting solutions (see **Exhibit 26** for industry related transactions).

Osram issued 104.7 million shares (equivalent to 80.5% of the company's total shares while Siemens retained the remaining percentage) at €24.0 each[lii], valuing Osram at €2.5 billion (or approximately 7.8x[6] EV/EBITDA 2012)[liii], a considerably lower value compared to the €3.23 billion Siemens was initially expecting. This IPO was particularly difficult as Siemens had been trying to sell Osram through an IPO since 2011. Due to the lighting market slowdown, the stock market was too volatile for Siemens to risk it all, making it calling off the IPO several times[liv]. De Vries went further and looked in Bloomberg for Osram stock performance after the listing date (see **Exhibit 27** for Osram stock performance).

When deepening its research about this possible opportunity in making part and subscribing the IPO, Luuk de Vries thought to himself that it would be better to see how the past performances were in past Dutch IPOs. What he found was, at least, intriguing. De Vries found that there had been an average initial under-pricing level of 17.6% and that the median initial return was 5%, while in 17% of the cases the initial returns were negative. Moreover, in the beginning of 1997 to the 2000's, the level of under-pricing by the end of the first trading day was 35.8% where the IPOs significantly underperformed their sector-specific benchmark by 38.4% after 3 years[lv].

[6] *To reach an EV/EBITDA multiple of 7.8x, it was added to the market capitalization of €2.5 billion, Osram Lighting 2012 Net Debt of €595.3 million to reach an EV of €3.0953 billion. Subsequently, it was divided by its 2012 EBITDA of €395.4 million.*

As the IPO date was approaching the market was reacting in the meantime. Contrary to the beliefs of the CEO, Mr. van Houten, analysts at Jefferies[lvi], an investment bank headquartered in New York, believed that Philips Lighting would have a difficult future as a stand-alone company due to the fact that 85% of its profits were coming from the sale of traditional bulbs, a market that was shrinking with the rise of LED lamps sales. Moreover, Barclays analysts[lvii] were fearing the slow pace of the lighting divestment, considering it would take longer for Philips to improve its remaining businesses which accounted for two thirds of the Dutch conglomerate's revenues. During the period after the announcement of the demerger of the two companies, Daniel Cunliffe, analyst at Liberum Capital, stated *"what I've heard is [an enterprise] valuation of up to €5.5 billion [for Philips' lighting business]"*[lviii].

On May 16th, Royal Philips announced in a press release that Philips Lighting shares would be offered at a price range between €18.50 and €22.50[lix]. That range was valuing the business at a market capitalization between €2.78 and €3.38 billion. According to the new company's CEO:

"The interest we have received from the investor community in Philips Lighting is very encouraging. As a standalone, listed company we will be committed to further expanding our global market-leading position in the general lighting market, driving the transition to LED and connect lighting systems and services, and delivering on our financial outlook. With a strong cash flow generation, we believe we present a solid investment case".

Eric Rondolat, Philips Lighting CEO, IPO Launch Press Release

Moreover, the company granted the underwriters, as part of the offering, an over-allotment option for up an additional 15% of the number of offered shares ("Over-Allotment shares"). In sum, would the option be converted and the total amount of shares offered would account for 28.75% of the total shares. Both companies, after the split, would be subjected to a lock-up period of 180 days and Philips' Board of Management (CEO and CFO of both companies)

would be subject to a lock-up of 360 days. The lock-up period makes it impossible, without permission from the Joint Global Coordinators, to sell, directly or indirectly, ordinary shares within the period settled. The intentions of Royal Philips consisted in selling the shares to institutional and retail investors in the Netherlands and to other certain qualified institutional investors in other countries[lx].

The Decision

It was May 16th and de Vries had to hurry up to decide what to do with all that information he had gathered for the past month as the offering period had started at that day, 9 a.m., and would cease for institutional investors by May 26th, 12 a.m.. De Vries had to be quick especially because he had still to convince Vincent Shuuring to participate in the IPO would he decide that it was a good opportunity. More than convincing Shuuring to buy at the IPO, de Vries had also to decide which strategy would better suit this IPO. After all this search during the past month, should de Vries try to convince Vincent Shuuring to buy at the IPO? At which price? If yes, should he recommend to flip the stock (buy at the IPO and sell immediately in the first day of trading) playing with the possible IPO discount? Or would it be more beneficial in this case to hold longer the stocks as data pointed to good returns for spun-off companies? However, de Vries knew that this was not a spin-off as the media frequently referred to. Hence, if he decides not to recommend to buy at the IPO, should they short sell the stock as future prospects for Philips Lighting were challenging?

Teaching Note

The following case study has the objective of studying the situation involving Royal Philips, Philips Lighting and the fictitious Portfolio Manager of AMS Capital Hedge Fund, Luuk de Vries, as of May 2016. The case will focus on Demerger, Initial Public Offering (IPO), Equity Carve-Out and Investment Strategy Decisions subjects, making this case appropriate to study in courses such as Applied Corporate Finance and Mergers & Acquisitions. When solving this case, students should understand the concept of IPO, the strategic reasoning behind selling Philips Lighting and the investment opportunities this sale has for profit seeking investors. A set of proposed questions follows, together with the suggested answers.

1 – Why is Royal Philips selling its lighting business? Why are they selling equity instead of raising debt in the capital markets? Relate it with Royal Philips Operating Performance ability to sustain Value Creation.

Part 1 – Why are they selling?

Philips' culture relied on divesting and selling businesses that struggled to succeed in the market. Its failure in introducing the CD-Interactive led Philips to understand that a shift in its strategy was necessary. Therefore, in the 90's Philips reshaped its operations and began focusing on the healthcare industry. This industry presented itself to be very attractive and with potential to grow a lot. By looking at **Exhibit 14**, it is possible to see how fast the market grew. On top of that, as stated in the case, this industry had trends that forecasted long term growth and it was an industry that was still in need for more innovation (contrary to the lighting market that, by looking at **Exhibit 12**, shows to be a market with few opportunities). Royal Philips had already assumed itself as a healthcare company which is noticeable in their 2008 financial report: "*Philips continued its journey to become a health and well-being company*". Looking at **Exhibit 7**, it is visible the more prominent importance of the Healthcare sector for Royal Philips overall performance. Healthcare was contributing with 45% of the total EBITA of the three businesses combined whereas the Lighting sector was just accounting for 26%.

Finally, as observed in **Exhibit 2**, Royal Philips was underperforming the market in the later years. Hence there was pressure to do something and reshape the management team and focus. Two key metrics that provide extremely important information on company's value creation are the ROIC (Return on Invested Capital) and the WACC (Weighted Average Cost of Capital). If WACC is greater than ROIC, then the company is destroying value.

To infer if Royal Philips was indeed destroying value, first it is going to be calculated its WACC followed by its ROIC. Based on **Exhibit 8**, one can retrieve the main metrics to calculate the WACC. As shown in **TN Exhibit 1**, first, one needs to calculate Royal Philips' cost of equity using CAPM model giving a cost of 9.80%. For the cost of debt, it was used Royal Philips' credit rating for senior debt of BBB+. The spread was then retrieved from the table in **Exhibit 8** (correspondent to the credit rating) and added to the risk free rate. The market value of equity was reached by multiplying its share price by the total number of outstanding shares giving a value of about €21.606 billion. Finally, to reach the market value of debt, it was assumed the book value of debt (interest bearing) and treated as a one coupon bond with a coupon set equal to the interest expenses on all debt and the maturity set equal to the face value weighted average maturity of debt. The coupon was discounted at the cost of debt of the company. With all the calculations shown on **TN Exhibit 1**, a market value of debt of about €6.830 billion is reached. Assuming corporate taxes of 38.40%, and using the WACC formula, Royal Philips has a WACC of 7.87%. Additionally, an alternative WACC formula was used to strengthen the analysis. As for the ROIC, the formula used was (Op.Income*(1-t))/(NWCR+Fixed Assets). For the Operating Income, an average of the last three years was used to account for the substantial volatility presented. Based on **TN Exhibit 1** calculations, Royal Philips has a ROIC of 3.03%. Therefore, one can see that Royal Philips was indeed destroying value. In situations like this, the management team is put under pressure to improve the ROIC which is commonly done by selling non-performing assets in order to get the ROIC in line with WACC (**TN Exhibit**

1 also shows comparison between value creation of Healthtech business versus the Lighting one).

Another reason that could be behind this strategic sale is the possible conglomerate discount being applied to Royal Philips' stock. Khorana et al (2011)[lxi] debate on this recent trend where companies go under corporate restructurings to increase corporate values. More on this will be analysed in **Question 3.**

Part 2 - Why selling equity instead of raising debt?

According to Ali, Hashmi and Mehmood[lxii] (2016) findings, there is an inverted u-shaped relation between diversification strategy and performance where too much diversification creates agency problems and internal inefficiencies. Royal Philips was more in need of narrowing its scope[lxiii] than asking for debt in the market as previously founded with ROIC and WACC comparison. In addition to that, according to a McKinsey&Company[lxiv] article that debates about Equity Carve-Outs, they enable full strategic freedom[lxv] and access to independent funding[lxvi]. According to Frans van Houten, this was their intention: *" At the same time, giving independence to our Lighting solutions business will better enable it to expand its global leadership position and venture into adjacent market opportunities"*. This would potentiate Philips Lighting future transactions. However, despite carving-out the lighting business, Royal Philips would still hold 75% of the shares. Royal Philips interests were in fact still dependent on Philips Lighting performance. Consequently, for a carved-out company, it can use stock option compensations to improve the company's performance as they are the significant part of the total compensation to carve-out executives. This would work as a sort of mechanism to align interests.

To conclude, in this case, the sale of Philips Lighting works in three ways: enables Royal Philips to focus in *HealThech* (gradually, since they would still hold 75% of lighting and probably this

focus would not be so visible in the beginning), secondly, uses the proceeds of the sale to finance investment in its *HealthTech* business and third it can possibly improve Royal Philips future valuations. Following this reasoning, selling equity makes more sense than simply issuing bonds (debt financing) to boost their *HealthTech* business.

2 – What is the relation between Royal Philips and Philips Lighting after the IPO? Is there any specificity regarding Corporate Governance?

After the IPO, Royal Philips would hold 75% of Philips Lighting. The ownership structure can be seen in **Exhibit 15**. Despite being two distinctive companies after the "Separation Date", both entities would launch their products under the same brand: "Philips", as it would be advantageous for both companies since "Philips" was a strong brand in the market, and more important, it was considered the most preferred one in LED lighting globally. This would potentiate Philips Lighting initial performance as a stand-alone company. Furthermore, assets, liabilities, employees and contracts of the former Royal Philips were allocated between the new Royal Philips and Philips Lighting.

By operating in the LED business, Philips Lighting had to maintain a relationship with the Lumileds and automotive lighting components businesses, which were not included under Philips Lighting operations, (remained under 100% ownership of Royal Philips) but worked as its supplier. The strategic partnership and supply agreement contains a purchase commitment whereby Philips Lighting is entitled of purchasing from Lumileds at least 60% of its actual spend in LED components for a period of four years beginning in February 1st, 2016. The price was provided "inter alia" meaning that the price had to be equal or below the prices practiced by other relevant suppliers. Under the case where the price is higher than the competitors', there is another separate compensation agreement between Philips Lighting and Royal Philips.

Finally, in terms of governance, Philips Lighting will have its own structure as it can be seen in **Exhibit 16.** It is a two-tier board structure consisting in a Board of Management and a Supervisory Board. The board of management is independent of Royal Philips. However, several members of the supervisory board were also executives at Royal Philips. Kees van Lede was since 2003 member of the supervisory board of Royal Philips, Frans van Houten, at that time was CEO and Chairman of Royal Philips and Abhijit Bhattacharya was CFO and executive vice president of Royal Philips. This aspect comes from the Relationship Agreement whereby Royal Philips, holding more than 30% of Philips Lighting, had the right to nominate two members to the Supervisory Board. This aspect of governance relationship between parent and carved-out company is debated by Koller (1990)[lxvii]. When the parent still holds a controlling stake in the newly carved-out company, the parent's executives make sure that the best interests of the company and shareholders are met. This agreement certifies Royal Philips that Philips Lighting takes the right decisions for a strong future performance as they still own 75% (or 71.25% with the over-allotment option) of Philips Lighting shares and want to assure they do not incur in losses.

3 – What is a conglomerate discount? In this case, do you consider Royal Philips is suffering from it?

Part 1 – What is a conglomerate discount?

Years ago, companies started acquiring different businesses saying it would allow them to create positive synergies: through cost reduction, risk diversification and revenue upside by selling complementary products. Along with this phenomenon, another one, related to conglomerates' valuation appeared: the conglomerate discount. The conglomerate discount is nothing more than the conglomerate's stock price being undervalued relative to its pure-play competitors. A way to calculate it is by summing up the intrinsic value of each subsidiary and subtracting the enterprise value of the conglomerate. According to Ingo Walter (2004)[lxviii], there

seems to exist two main reasons for such to happen. First, it is argued that management allocates capital inefficiently and foregoes positive NPV projects by not being able to focus on each business. Secondly, investors usually lack to "have a view" on the pureness of one of each leading them to avoid these types of stocks.

Part 2 – Does Royal Philips suffer from conglomerate discount?

To evaluate if there is in fact a discount being applied to Royal Philips, it needs to be analysed if the sum of the parts (Royal Philips in Healthtech and Philips Lighting) is worth more than the prior conglomerate of Royal Philips. For this measurement, a modified variation of Berger and Ofek (1995)[lxix] is going to be used. This version, compares the EV's of the parts to avoid possible cash distortions (especially in European conglomerates) that could arise from market capitalizations (Bernhard and Carsten (2003))[lxx]. For such, the valuation approach used is going to be the multiples valuation. The reasons to forego the Discounted Cash Flow Method are the uncertain, difficult to estimate and high growth rates for the Healthtech industry. Hence, using the DCF method could induce weak and misleading valuations. To calculate the EV of each company, it is going to be used the EV/EBITDA as well as the EV/EBIT multiple. According to a research conducted by McKinsey&Company[lxxi], P/E multiples do not account for capital structure and are based on earnings which include many non-operating items. Regarding the EV/Sales multiple, it is only useful when companies are recent and with relevant revenues growth, which is not this case. Hence, the EV/EBITDA poses to be the most appropriate one as it corrects for the up mentioned problems. The use of EV/EBIT is to account for depreciation and amortization allocation since healthcare and lighting pose to be capital intensive sectors and will have high amounts of D&A. To choose comparable peers for each company, several steps will be taken: analyse which ones have the same core businesses, infer which ones have comparable and similar relevant sizes and also which ones have the same growth prospects. Presented also in the case, **Exhibits 13 & 26** show similar transactions of companies from the

sector of heathtech (medical devices) and lighting (despite lower deal sizes, those are the best proxies as, according to IMAP research in 2016, the average deal value was $38 million). Alongside the trade multiples of comparable companies, one may also use transaction multiples to strengthen the valuation.

Taking into consideration the up mentioned criteria, for Philips Lighting (with revenue growth of approximately 6.93%), Acuity Brands Inc, Zumtobel Group AB and Osram Light (despite the negative growth, it is the biggest Philips Lighting's competitor) will be used as comparable firms for valuation. Based on **TN Exhibit 2** a football field is built to find a range where Philips Lighting EV can be. Shown in **TN Exhibit 3**, one can analyse the football field drawn. Solely based on such information, it is possible to range Philips Lighting EV between €3.33 billion and €7.77 billion. For this analysis, the Osram IPO was also included in the transaction multiples. The EV ranges were based on Philips Lighting EBITDA of €646 million and EBIT of €331 million.

For Philips Healthtech (which registered a revenues growth of approximately 16.4%), assuming the same criteria, GN Store Nord, Draegerwerk AG&Co and Carl Zeiss Meditec AG will be used as comparable firms for valuation. Based on **TN Exhibit 4** and **TN Exhibit 5**, following the same logic and method used in Philips Lighting valuation, Philips Healthtech value would range between €17.57 billion and €39.32 billion. This valuation assumed €2.492 billion of EBITDA (subtract €646 million of lighting to the total Royal Philips' 2015 EBITDA of €3.139 billion) and an EBIT of €535 million. Therefore, the sum of the parts gives an EV ranging between €20.90 billion and €47.09 billion. When comparing to the reported EV of Royal Philips of €25.707 billion it is possible to infer that there is a big likelihood of Royal Philips being valued at discount (see **TN Exhibit 6** for graphical analysis).

4 – How much is Philips Lighting worth? How much should its share price be?

To infer how much Philips Lighting is worth, it is required to reach its market capitalization back from the EV which was already obtained in **Question 3**.The bridge to equity one needs to develop to reach market capitalization from EV is to add financial investments and cash (cash and cash equivalents) and then to subtract debt (including LT Liabilities), leases, preference shares and minority and non-controlling interests. In other words, it is finding the net debt and subtracting it from the EV. Based on **Exhibit 19**, Philips Lighting reached a net debt value of approximately €743 million. Therefore, subtracting net debt to EV gives Philips Lighting a market capitalization between €2.59 billion and €7.03 billion. It is left to calculate the total number of shares. In the case it is highlighted that Royal Philips will sell in the IPO 25% of the shares which corresponds to 37.5 million shares. Mathematically, one can calculate that 100% of the shares corresponds to 150 million shares. This returns a price per share range between €17.26 and €46.87.

5 – Should de Vries convince Shuuring to buy at the IPO? If so, should they hold longer the stock or sell immediately in the first day of trading? If they opt not to buy at the IPO, should they short sell the stock?

Buy at the IPO and hold the stock:

There are some facts that turn this investment as a favourable one and others that not. Given the range between €18.50 and €22.50 per share Royal Philips was predicting to offer the stock, Philips Lighting was being valued at a market value between €2.78 and €3.38 billion. Mentioned in the case, Daniel Cunliffe, analyst at Liberum Capital, stated that what was being debated in the market was an EV up to €5.5 billion. According to **Questions 3 & 4** calculations, Philips Lighting share price range was pointing for an IPO under-pricing. Mentioned in the case, in past Dutch IPOs in the 2000's, the under-priced IPOs tended to underperform the market by 38.4% after 3 years. But there are also facts that turn this investment strategy desirable. Osram IPO, as it can be seen in **Exhibit 27**, was a success in the long term. It beat

the market with a cumulative return of approximately 80% whereas the MSCI Index gave approximately a cumulative return of 25%. However, if seen closely, there is a sharp decrease recently in Osram share price. This is due to the fact that analysts gave a considerably worse 2016 outlook than they expected[lxxii]. A last plus in holding longer the shares is tied with the fact that Philips brand was the preferred one in LEDs giving it a strong positioning in the market. All in all, and based on **Exhibit 9**, it is possible to see how good returns are for spun-off companies. Remains to be said that despite all the media referring to this transaction as a spin-off, in reality, it was not.

Buy at the IPO and sell in the first day of trading:

According to market analysts and with the share price valuation obtained in **Question 4**, Philips Lighting stock had chances of going up in the first day of trading. This argument gains even more credibility when backed up by Oliver Reiche (2015)[lxxiii], who states in his book that every country in Europe is affected by IPO under-pricing. Assuming the stock was offered at the highest predicted price of €22.50, AMS Capital could make a strong profit. Also, such competitive and fierce outlook for this market near future posed several risks that a profit seeking hedge fund may not be willing to incur in. The major downside in incurring in this strategy was the return they would possibly forego in the long-term, especially if the stock behaved like Osram. Being Philips Lighting the bigger player in the lighting industry, as mentioned in the case, it could perfectly do well if focus solely on its business after the separation.

Do not buy at the IPO and going short in the first day of trading:

The future for Philips Lighting as a stand-alone company was challenging. Most of its sales, €615 million, were coming from BG Lamps and with recent EU regulations, traditional lamps were being banned and shifted to LEDs. One can observe **Exhibit 12** and see that despite a

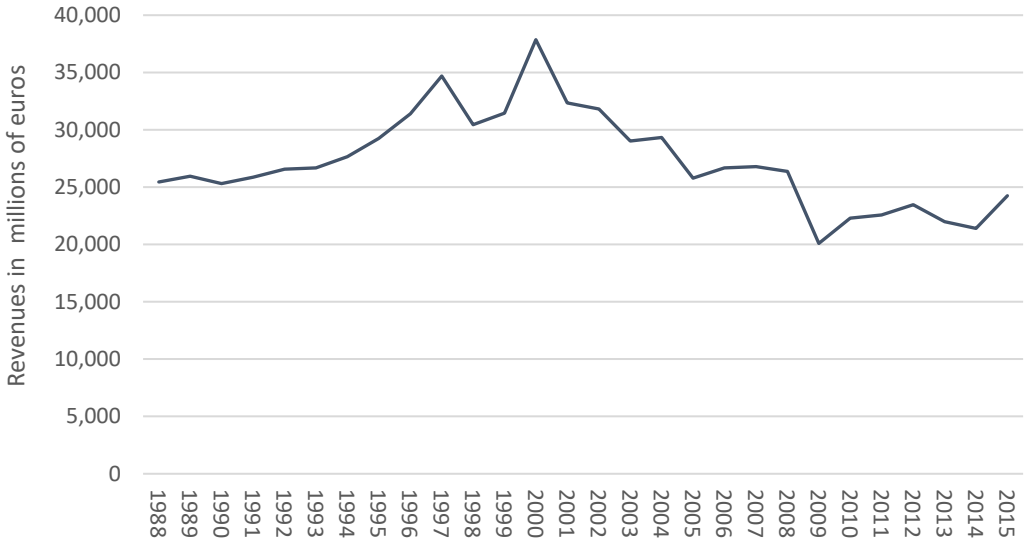
forecasted growth for the lighting market, only LEDs were driving that growth. As mentioned in the case, Philips Lighting was already in the process of changing its traditional lamp plants to LED plants but such could lead to more future costs and it was a process that could take long to be finished. Another concern was that, being the main geographical drivers of this market China and Latin America, based on **Exhibit 25**, Philips Lighting sales were still more predominant in Northern America and Western Europe. Topping that, Lumileds was not being included in the sale of Lighting and there were rumours in the market that this IPO was happening after Royal Philips failing to find a potential buyer[lxxiv]. As a final regard for this matter, such dividend pay-out ratio Philips Lighting was targeting would decrease the share price, and profit margins could decrease as this market was experiencing a price erosion due to fierce competition from Asia. These facts could induce a share price drop in the first months of trading. On the other hand, being Philips Lighting the major player in this market, there was a big risk in expecting that its price would go down.

Final recommendation:

The best recommendation should be underpinned by these major facts: AMS Capital was not performing well and more negative returns could seriously damage it; based on their investment strategy, they looked for short to medium term profits; the future outlook for Philips Lighting was challenging and uncertain. With that in mind, Luuk de Vries should try to convince Robert Shuuring to buy at the IPO and flip the stock in the first day of trading. According to Ritter and Welch (2002)[lxxv] , underwriters do promote specific share allocation for flippers to quick profit. Finally, according to Beatty and Ritter (1986)[lxxvi], *ex-ante* uncertainty leads to IPO under-price. Since there was uncertainty regarding the lighting market and Philips Lighting future, chances of profiting from the IPO under-price in the first day were high.

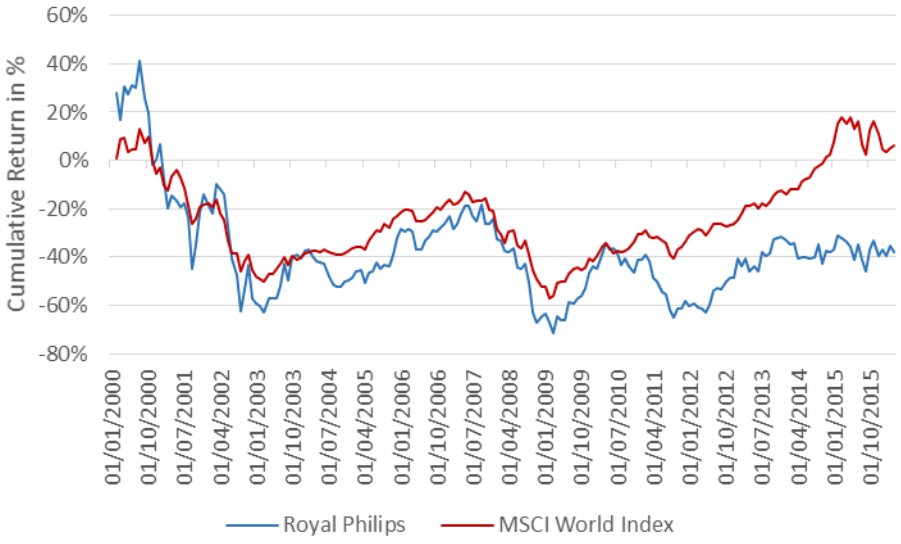
Appendix

Exhibit 1 – Royal Philips Revenues 1988-2015



Source: Bloomberg

Exhibit 2 – Historical Royal Philips Stock Cumulative Return 2000-2015



Source: Bloomberg

Exhibit 3 – Royal Philips Income Statement (2013-2015)

In Millions of EUR except Per Share			
12 Months Ending	**2013**	**2014**	**2015**
Revenue	**21,990**	**21,391**	**24,244**
+ Sales & Services Revenue	21,990	21,391	24,244
- Cost of Revenue	12,653	13,185	14,388
+ Cost of Goods & Services	12,653	13,185	14,388
Gross Profit	**9,337**	**8,206**	**9,856**
+ Other Operating Income	122	63	137
- Operating Expenses	7,604	7,783	9,001
+ Selling, General & Admin	5,882	5,871	7,024
+ Selling & Marketing	*5,057*	*5,124*	*5,815*
+ General & Administrative	*825*	*747*	*1,209*
+ Research & Development	1,659	1,635	1,927
+ Other Operating Expense	63	277	50
Operating Income (Loss)	**1,855**	**486**	**992**
- Non-Operating (Income) Loss	330	301	369
Pretax Income	**1,525**	**185**	**623**
- Income Tax Expense (Benefit)	466	26	239
- (Income) Loss from Affiliates	25	-62	-30
Income (Loss) from Cont Ops	**1,034**	**221**	**414**
- Net Extraordinary Losses (Gains)	-138	-190	-245
Income (Loss) Incl. MI	**1,172**	**411**	**659**
- Minority Interest	3	-4	14
Net Income, GAAP	**1,169**	**415**	**645**
- Preferred Dividends	0	0	0
- Other Adjustments	0	0	0
Net Income Avail to Common, GAAP	**1,169**	**415**	**645**

Source: Bloomberg

Exhibit 4 – Royal Philips Balance Sheet (2013-2015)

In Millions of EUR except Per Share 12 Months Ending	2013	2014	2015
Total Assets			
+ Cash, Cash Equivalents & STI	2,475	1,998	1,778
+ Accounts & Notes Receiv	4,420	4,476	4,727
+ Inventories	3,240	3,314	3,463
+ Other ST Assets	1,339	2,603	2,725
Total Current Assets	**11,474**	**12,391**	**12,693**
+ Property, Plant & Equip, Net	2,780	2,095	2,322
+ LT Investments & Receivables	496	462	489
+ Other LT Assets	11,809	13,404	15,472
Total Noncurrent Assets	**15,085**	**15,961**	**18,283**
Total Assets	**26,559**	**28,352**	**30,976**
Liabilities & Shareholders' Equity			
+ Payables & Accruals	5,435	4,600	4,897
+ Accounts Payable	2,458	2,495	2,669
+ ST Debt	592	392	1,665
+ Other ST Liabilities	2,449	3,684	3,506
Total Current Liabilities	**8,476**	**8,676**	**10,068**
+ LT Debt	3,309	3,712	4,095
+ Other LT Liabilities	3,547	4,996	5,033
Total Noncurrent Liabilities	**6,856**	**8,708**	**9,128**
Total Liabilities	**15,332**	**17,384**	**19,196**
+ Preferred Equity and Hybrid Capital	0	0	0
+ Share Capital & APIC	1,984	2,368	2,855
- Treasury Stock	718	547	363
+ Retained Earnings	10,438	8,790	8,040
+ Other Equity	-490	256	1,130
Equity Before Minority Interest	**11,214**	**10,867**	**11,662**
+ Minority/Non Controlling Interest	13	101	118
Total Equity	**11,227**	**10,968**	**11,780**
Total Liabilities & Equity	**26,559**	**28,352**	**30,976**

Source: Bloomberg

Exhibit 5 – Royal Philips Pro-Forma Income Statement (without Philips Lighting) (2013-2015)[7]

In Millions of EUR except Per Share 12 Months Ending	2013	2014	2015
Revenue	**14,861**	**14,410**	**16,779**
+ Sales & Services Revenue	14,861	14,410	16,779
- Cost of Revenue	8,117	8,780	9,654
+ Cost of Goods & Services	8,117	8,780	9,654
Gross Profit	**6,744**	**5,630**	**7,125**
+ Other Operating Income	91	50	89
- Operating Expenses	5,348	5,653	6,679
+ Selling, General & Admin	3,927	3,991	5,040
+ *Selling & Marketing*	3,335	3,467	4,064
+ *General & Administrative*	592	524	976
+ Research & Development	1,284	1,240	1,561
+ Other Operating Expense	137	422	78
Operating Income (Loss)	**1,487**	**27**	**535**
- Non-Operating (Income) Loss	329	295	365
Pretax Income	**1,158**	**-268**	**170**
- Income Tax Expense (Benefit)	421	-40	156
- (Income) Loss from Affiliates	26	-60	-30
Income (Loss) from Cont Ops	**866**	**250**	**174**
- Net Extraordinary Losses (Gains)	-138	-190	-245
Income (Loss) Incl. MI	**1,004**	**440**	**419**
- Minority Interest	3	3	0
Net Income, GAAP	**1,001**	**437**	**419**
- Preferred Dividends	0	0	0
- Other Adjustments	0	0	0
Net Income Avail to Common, GAAP	**1,001**	**437**	**419**

Source: Bloomberg

[7] *This Income Statement is a proxy obtained by subtracting Philips Lighting Income Statement as a stand-alone company to Royal Philips Consolidated Income Statement*

Exhibit 6 - Royal Philips Pro-Forma Balance Sheet (without Philips Lighting) (2013-2015)[8]

In Millions of EUR except Per Share 12 Months Ending	2013	2014	2015
Total Assets			
+ Cash, Cash Equivalents & STI	2,426	1,923	1,695
+ Accounts & Notes Receiv	3,118	3,018	3,208
+ Inventories	2,257	2,318	2,475
+ Other ST Assets	1,176	2,406	2,531
Total Current Assets	**8,977**	**9,665**	**9,909**
+ Property, Plant & Equip, Net	1,950	1,373	1,688
+ LT Investments & Receivables	466	429	461
+ Other LT Assets	9,336	10,553	12,475
Total Noncurrent Assets	**11,752**	**12,355**	**14,624**
Total Assets	**20,729**	**22,020**	**24,533**
Liabilities & Shareholders' Equity			
+ Payables & Accruals	3,842	3,045	3,189
+ Accounts Payable	1,571	1,611	1,618
+ ST Debt	590	343	1,579
+ Other ST Liabilities	2,144	3,349	3,110
Total Current Liabilities	**6,576**	**6,737**	**7,878**
+ LT Debt	3,303	3,671	4,093
+ Other LT Liabilities	2,922	4,227	4,398
Total Noncurrent Liabilities	**6,225**	**7,898**	**8,491**
Total Liabilities	**12,801**	**14,635**	**16,369**
+ Preferred Equity and Hybrid Capital	0	0	0
+ Share Capital & APIC	1,984	2,368	2,855
- Treasury Stock	718	547	363
+ Retained Earnings	10,270	8,812	7,814
+ Other Equity	-3,619	-3,261	-2,157
Equity Before Minority Interest	**7,917**	**7,372**	**8,149**
+ Minority/Non Controlling Interest	11	13	15
Total Equity	**7,928**	**7,385**	**8,164**
Total Liabilities & Equity	**20,729**	**22,020**	**24,533**

Source: Bloomberg

[8] *This Balance Sheet is a proxy obtained by subtracting Philips Lighting Balance Sheet as a stand-alone company to Royal Philips Consolidated Balance Sheet*

Exhibit 7 – Royal Philips per operational segment (2014-2015)

Philips Group
Sales, EBIT and EBITA
in millions of EUR unless otherwise stated
2014 - 2015

	Sales	EBIT	%	EBITA[1]	%
2015					
Healthcare	10,912	819	7.5%	1,024	9.4%
Consumer Lifestyle	5,347	621	11.6%	673	12.6%
Lighting	7,411	486	6.6%	594	8.0%
Innovation, Group & Services	574	(934)	-	(919)	-
Philips Group	**24,244**	**992**	**4.1%**	**1,372**	**5.7%**
2014					
Healthcare	9,186	456	5.0%	616	6.7%
Consumer Lifestyle	4,731	520	11.0%	573	12.1%
Lighting	6,869	185	2.7%	293	4.3%
Innovation, Group & Services	605	(675)	-	(661)	-
Philips Group	**21,391**	**486**	**2.3%**	**821**	**3.8%**

[1] For a reconciliation to the most directly comparable GAAP measures, see chapter 15, Reconciliation of non-GAAP information, of this Annual Report

Source: Royal Philips Annual Report 2015

Exhibit 8 – 2015 Philips Group Equity and Debt market conditions

2015 Philips Group Equity and Debt market conditions

As of 2015

Royal Philips

Equity

Shares Outstanding	917,104,000
Share Price	23.56
Beta	1.44

Debt

Risk Free	1.30%
MKT Risk Premium	5.90%
S&P Rating (senior debt)	BBB+
Corporate Taxes	38.40%
Interest Expense *million €*	271

Unsecured USD Bonds *(million EUR)*

	Coupon	YTM	Amount	Maturity (years)
Due 2025	7.75%	7.43%	91	10
Due 2026	7.20%	6.89%	152	11
Due 2025	7.13%	6.79%	94	10
Due 2018	5.75%	6.07%	1,144	3
Due 2038	6.88%	7.21%	915	23
Due 2022	3.75%	3.91%	915	7
Due 2042	5.00%	5.27%	458	27

Source: Reuters; Royal Philips 2015 Annual Report; Bloomberg

Philips Lighting

Debt		1	2	4	7
(in €millions)	Total	< 1 year	1-3 years	3-5 years	> 5 years
Long Term Debt	47	45	0	0	2

Interest Expense *million €*	5
Corporate Taxes	38.40%
S&P Rating (senior debt)	BBB+

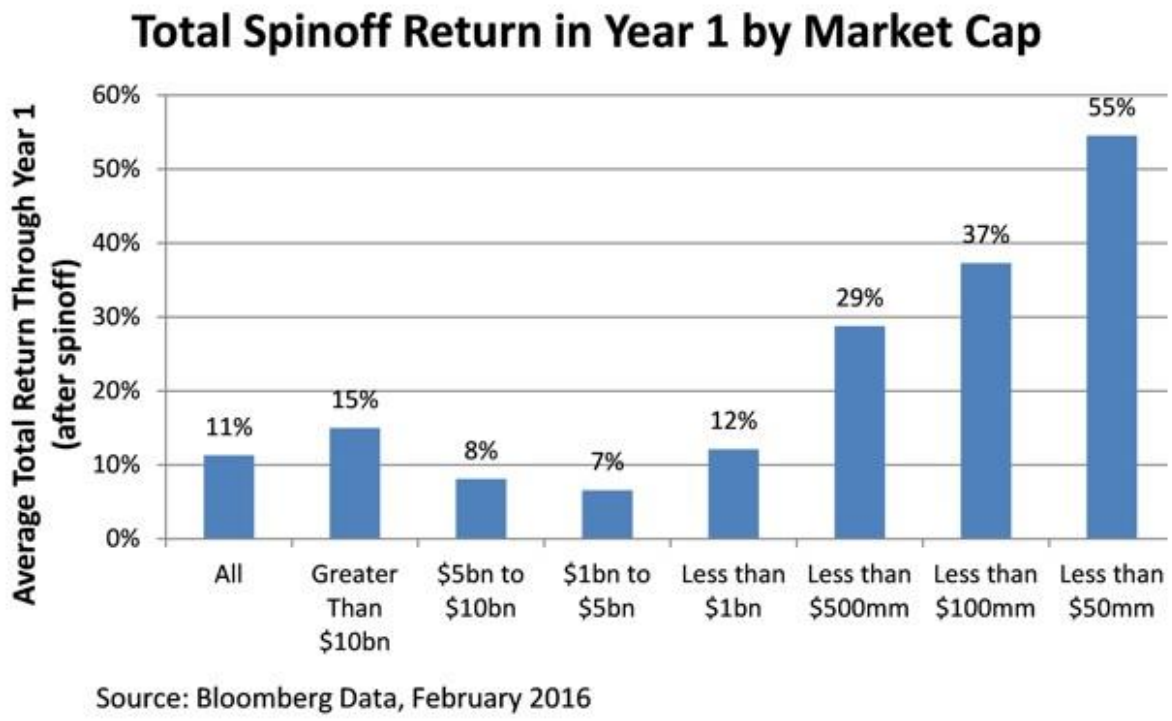
Source: Reuters; Royal Philips 2015 Annual Report; Bloomberg

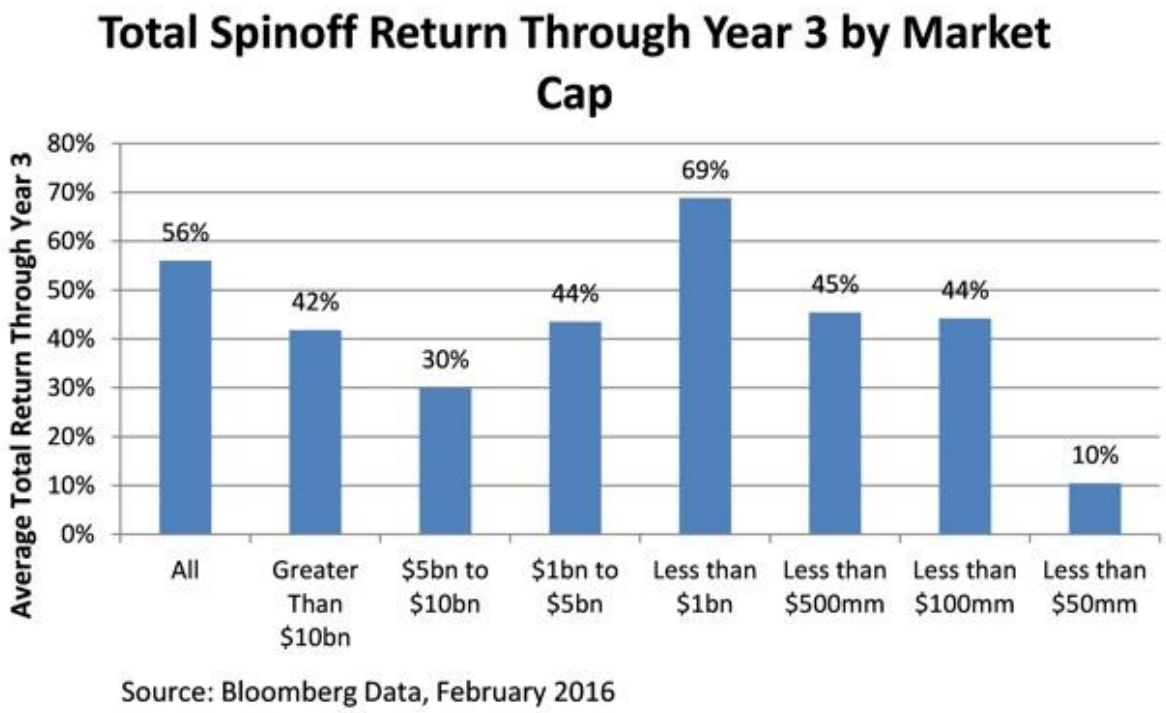
For large manufacturing firms
If interest coverage ratio is

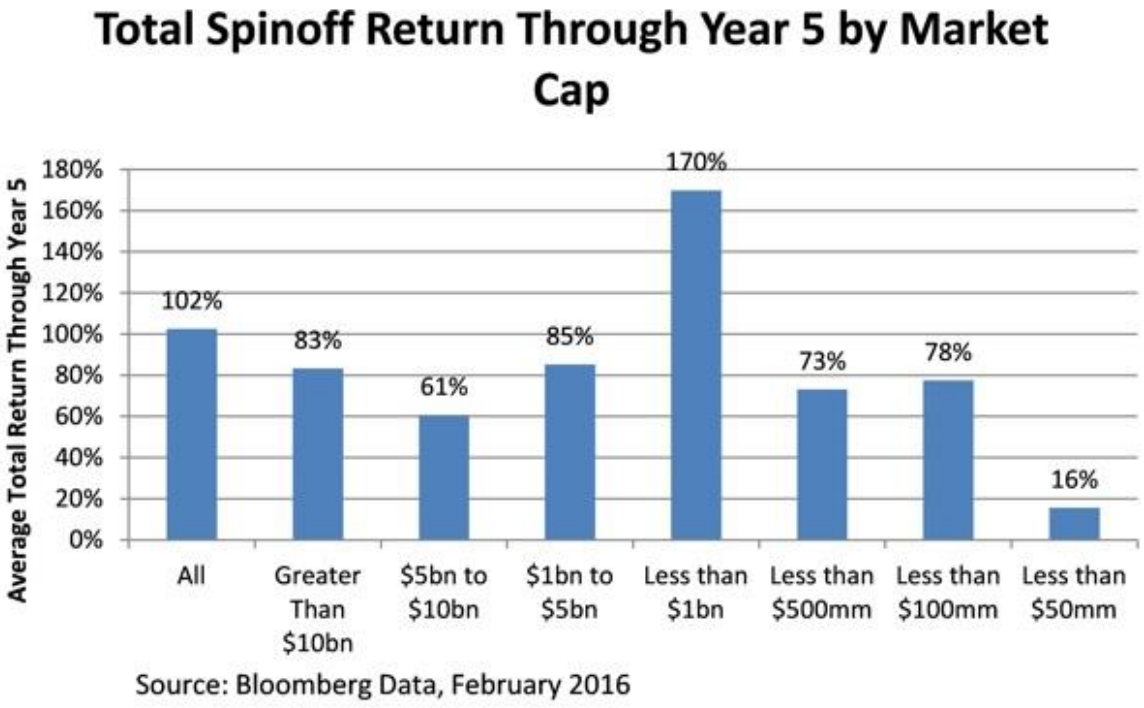
>	≤ to	Rating is	Spread is
-100000	0.199999	D2/D	14.00%
0.20	0.649999	C2/C	10.50%
0.65	0.799999	Ca2/CC	8.00%
0.80	1.249999	Caa/CCC	6.50%
1.25	1.499999	B3/B-	5.50%
1.50	1.749999	B2/B	4.50%
1.75	1.999999	B1/B+	3.75%
2.00	2.2499999	Ba2/BB	3.00%
2.25	2.49999	Ba1/BB+	2.50%
2.50	2.999999	Baa2/BBB	1.60%
3.00	4.249999	A3/A-	1.25%
4.25	5.499999	A2/A	1.10%
5.50	6.499999	A1/A+	1.00%
6.50	8.499999	Aa2/AA	0.80%
8.50	100000	Aaa/AAA	0.60%

Source: *https://www.google.pt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwjbysOs26DYAhXF6xQKHUc-CvMQFggwMAE&url=http%3A%2F%2Fwww.stern.nyu.edu%2F~adamodar%2Fpc%2Fratings.xls&usg=AOvVaw1JW2EuhhC3TQ7BGadTEHxg*

Exhibit 9 – Total Spin-off return by Market Capitalization







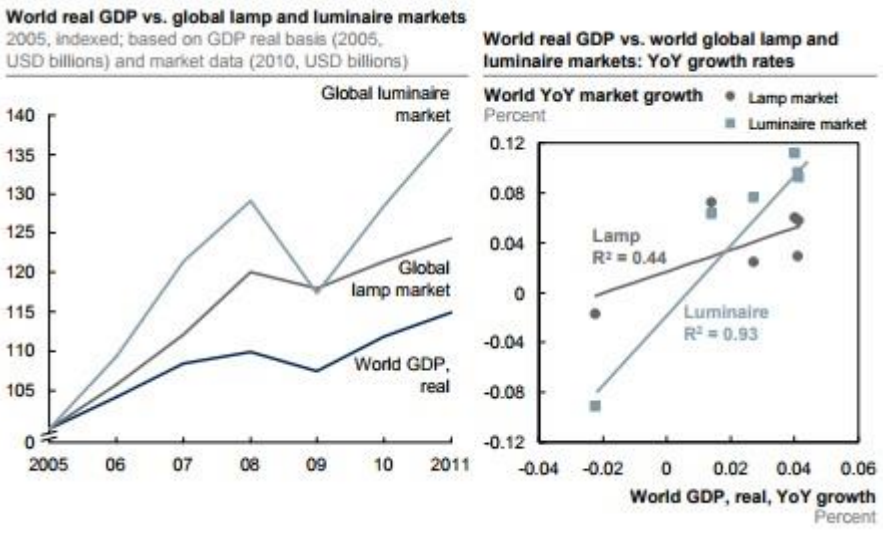
Source: https://seekingalpha.com/article/3961175-stock-spinoff-performance-market-cap

Exhibit 10 – Lighting bulbs specifications by type

	Incandescent	CFL	LED
Approximate cost per bulb	$1	$2	$8 or less
Average lifespan	1,200 hours	8,000 hours	25,000 hours
Watts used	60W	14W	10W
No. of bulbs needed for 25,000 hours of use	21	3	1
Total purchase price of bulbs over 23 years	$21	$6	$8
Total cost of electricity used (25,000 hours at $0.12 per kWh)	$180	$42	$30
Total operational cost over 23 years	**$201**	**$48**	**$38**

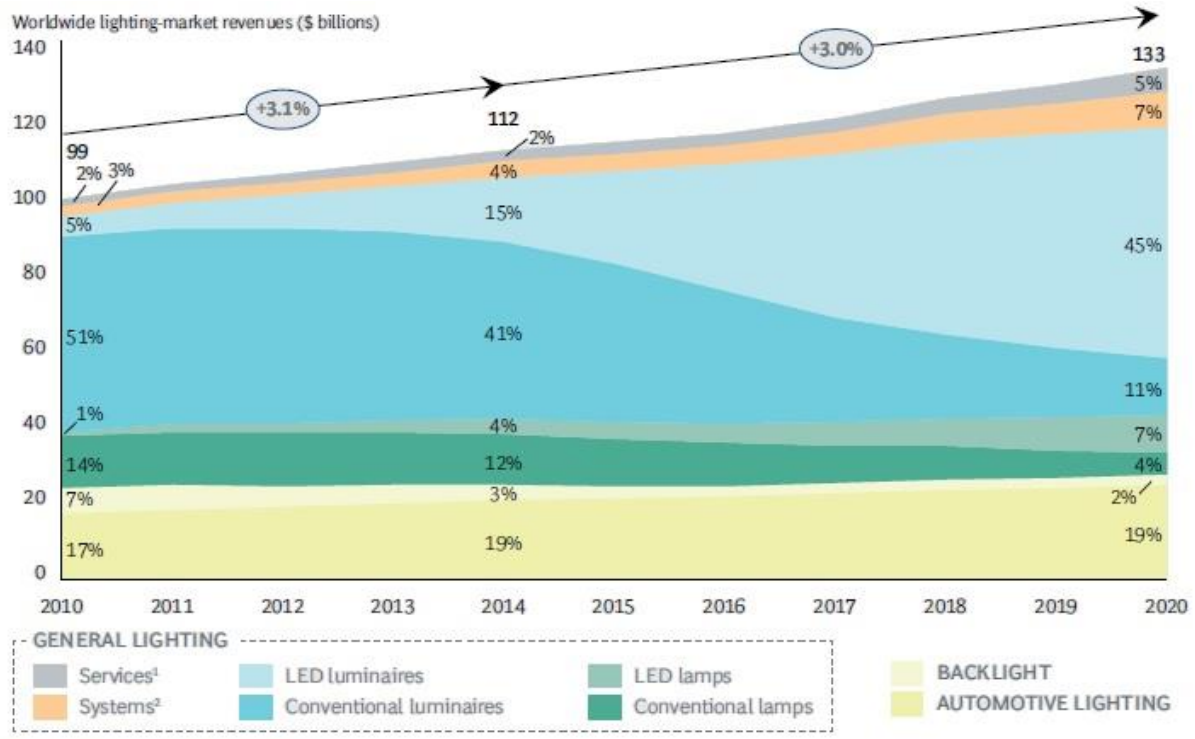
Source: Johnson, Holly. (2017). "Light Bulb Showdown: LED vs. CFL vs. Incandescent". The Simple Dollar. Available at: https://www.thesimpledollar.com/the-light-bulb-showdown-leds-vs-cfls-vs-incandescent-bulbs-whats-the-best-deal-now-and-in-the-future/

Exhibit 11 – World GDP and Global Lamp Market (2005-2011)

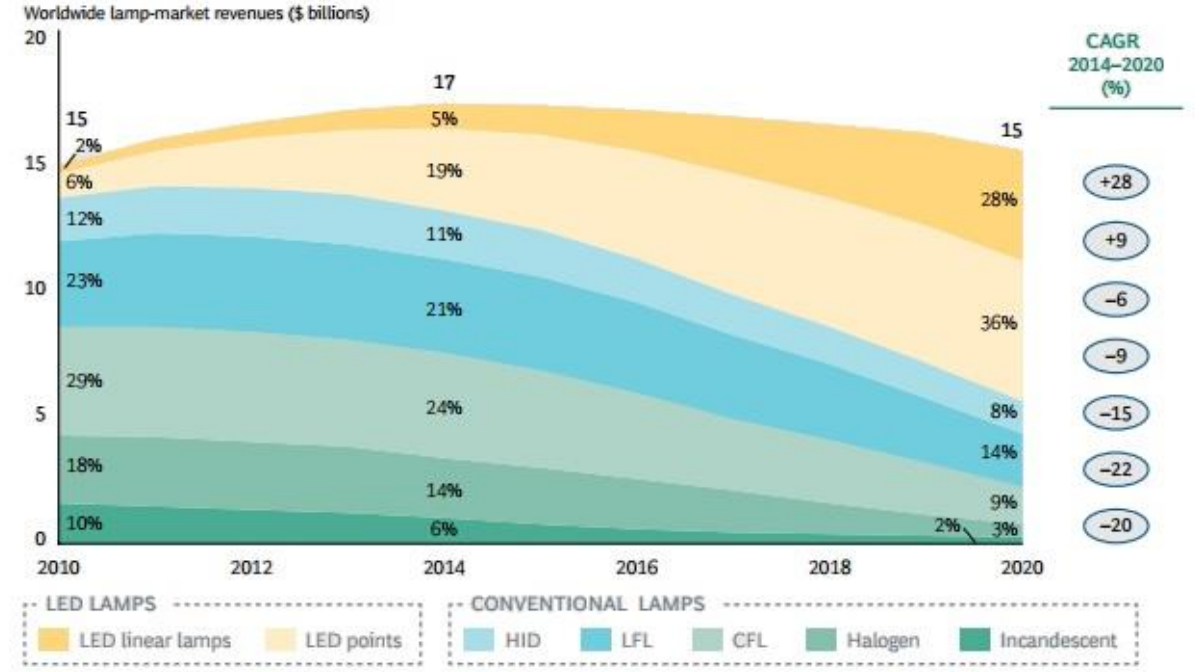


Source: Mckinsey&Company. (2011). Lighting the way: Pespectives on the global lighting market

Exhibit 12 – Lighting and Lamp Market Revenues (2010-2020)



Source: BCG 2020 Lighting-Market Model.
Note: LED electronics used in LED luminaires are included in the LED-luminaire market total; blue-collar services are excluded.
[1]Includes white-collar services (such as data technology services and systems integration).
[2]Includes only the added value of the system, not the lamps and luminaires included in the system.



Source: BCG 2020 Lighting-Market Model.
Note: CFL = compact fluorescent lamp; HID = high-intensity discharge; LED = light-emitting diode; LFL = linear fluorescent lamp.

Source: The Boston Consulting Group. (2015). How to win in a transformig lighting industry

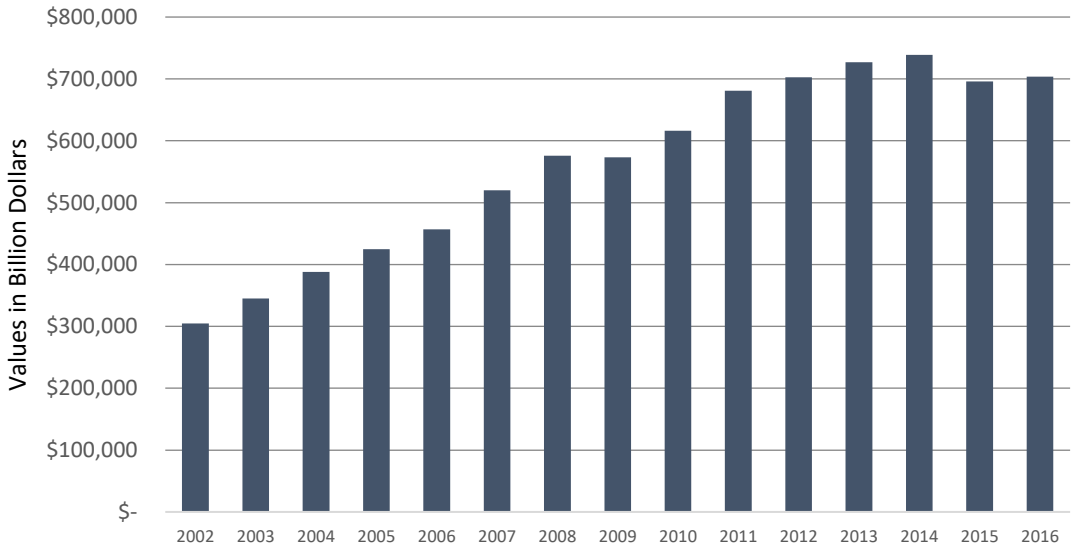
Exhibit 13 – Medical Devices M&A deals

(in EUR millions)

Date	Target	Target Description	Buyer	Size	EV/EBITDA
2015	Bio-Reference Laboratories Inc.	Detection, diagnosis, evaluation, monitoring, and treatment testing services	Opko Kealth Inc.	€ 1,358.20	12.14
2015	Carefusion Corporation	Medical instruments manufacturer	Becton Dickinson and Company	€ 11,401.90	7.05
2012	Synthes Inc.	Surgical instruments, implants and biomaterials developer	Johnson & Johnson	€ 13,806.20	10.1
Jul-05	Symmetry Medical Inc.	Surgical implants and instruments manufacturer	Tecomet Inc.	€ 497.70	11.83

Source: IMAP M&A Sector Report 2017

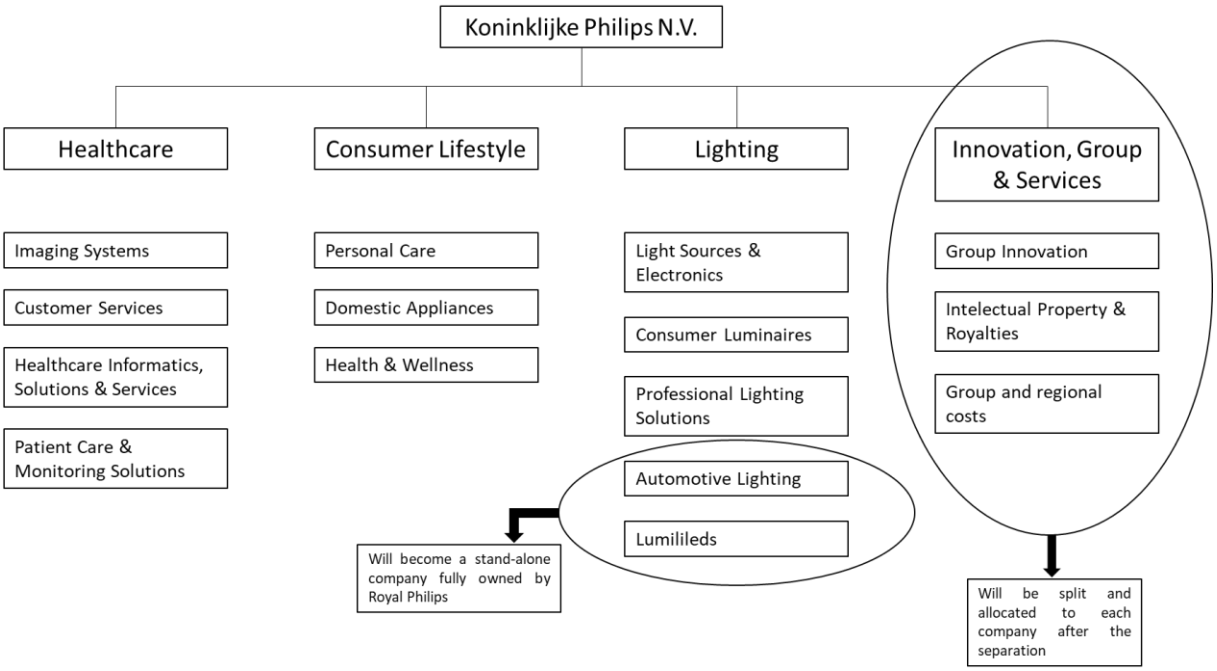
Exhibit 14 – Health and Wellness Market Size (2002-2016)



Source: Passport Euromonitor, Health and Wellness: Euromonitor from trade sources/national statistics

Exhibit 15 – Royal Philips' Structure

Before the IPO



After the IPO

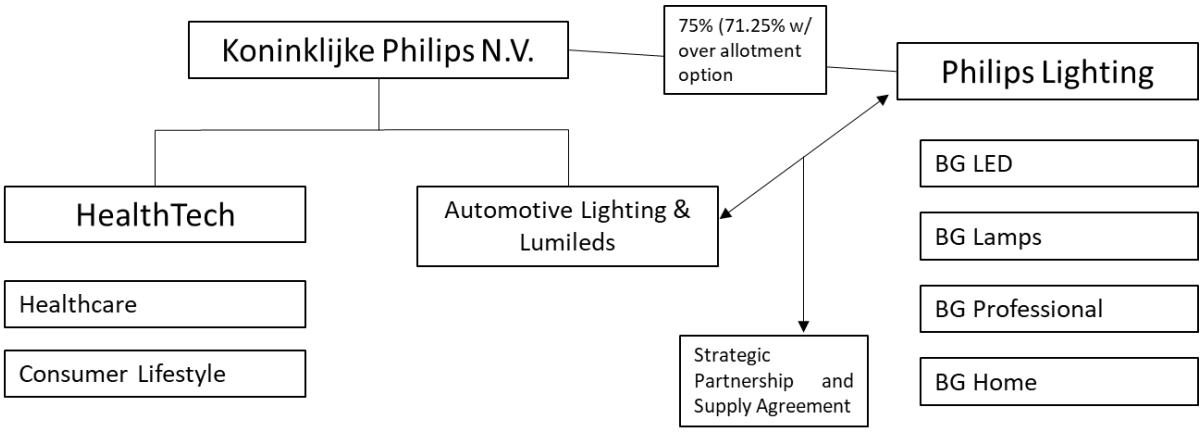


Exhibit 16 – Philips Lighting Corporate Governance structure as of the Settlement Date

Board of Management

The Board of Management is composed of the following two members of the Board of Management:

Name	Date of birth	Position	Member as of	Term
Eric Rondolat	30 April 1966	Chief Executive Officer	2 May 2016	4 year term expiring at the end of the annual General Meeting to be held in 2020
René van Schooten	25 June 1959	Chief Financial Officer	2 May 2016	4 year term expiring at the end of the annual General Meeting to be held in 2020

Supervisory Board

On the Settlement Date, the Supervisory Board will be composed of the following five members:

Name	Date of birth	Position	Member as of	Term/maximum
Arthur van der Poel	1 November 1948	Chairman	Settlement Date	4 year term expiring at the end of the annual General Meeting to be held in 2020
Frans van Houten	26 April 1960	Vice-Chairman	Settlement Date	4 year term expiring at the end of the annual General Meeting to be held in 2020
Rita Lane	24 October 1962	Member	Settlement Date	4 year term expiring at the end of the annual General Meeting to be held in 2020
Kees van Lede	21 November 1942	Member	Settlement Date	2 year term expiring at the end of the annual General Meeting to be held in 2018
Abhijit Bhattacharya	18 October 1961	Member	Settlement Date	4 year term expiring at the end of the annual General Meeting to be held in 2020

Kees van Lede

Cornelis Josephus Antonius van Lede, member of the Supervisory Board, Chairman of the Audit Committee and Chairman of the Remuneration Committee, is a Dutch national. Mr. van Lede obtained an MBA at INSEAD, Paris and a master's degree in law at Leiden University. Mr. van Lede worked at McKinsey as a consultant from 1967 until 1976. From 1976 until 1984 he was a member of the board of Nederhorst Bouw and HBG. In 1984, Mr. van Lede was appointed chairman of VNO-NCW and in 1991 he joined Akzo Nobel N.V. as a member of the board, and thereafter served as chairman of the management board between 1994 and 2003. In 1995 he was appointed chairman of the supervisory board of Puissance B.V. and Mr. van Lede currently still holds this position. During the period between 2002 and 2012, Mr. van Lede was the non-executive director of Sara Lee Corporation. After the separation, Mr. van Lede was non-executive director of D.E. Master Blenders 1753 N.V. between 2012 and 2014. Mr. van Lede joined the supervisory board of Heineken N.V. in 2003 and was chairman of the supervisory board until 2014. From 2003 until 2015, he was a member of the supervisory board of Air Liquide S.A. Mr. van Lede was appointed as non-executive director of Air France KLM S.A. in 2004 and in 2005 he was appointed senior adviser to JP Morgan Plc. Furthermore, Mr. van Lede was member of the supervisory board of Koninklijke Makkumer Aardewerk- en Tegelfabriek B.V. from 2005 to 2014 and of Royal Imtech N.V. from 2013 to 2015. In 2009 he became chairman of Stichting Lauwerecht and in 2003 he joined Royal Philips as member of the supervisory board.

Abhijit Bhattacharya

Abhijit Bhattacharya, member of the Supervisory Board, member of the Audit Committee and member of the Remuneration Committee, is an Indian national. Mr. Bhattacharya obtained a master's degree in Commerce majoring in finance, accounting and economics from Sydenham College of Commerce and Economics in Mumbai, India. Mr. Bhattacharya is an Associate of the Institute of Cost and Management Accountants in India. Mr. Bhattacharya joined Royal Philips in 1987 and held various senior management positions in the company in Asia Pacific, Europe and the United States. Mr. Bhattacharya assumed global responsibility as financial controller for Royal Philips' domestic appliance and personal care businesses in 2000 until 2004, based in the Netherlands. In 2004, he was appointed senior vice president and financial controller for multi-market semiconductors in Royal Philips' semiconductor business, and held that position until 2006 and in 2006 he was appointed senior vice president and financial controller for multi-market semiconductors at NXP Semiconductors N.V. and held that position until 2008. In 2008, Mr. Bhattacharya was appointed executive vice president and chief financial officer of ST-NXP Wireless (holding) AG and was a member of its executive committee until 2009. In 2009, Mr. Bhattacharya was appointed as the head of operations and quality and a member of the executive management team of the joint venture ST-Ericsson, who operated through ST-Ericsson Holding AG. He held this position until 2010. Mr. Bhattacharya returned to Royal Philips in 2010 and was appointed executive vice president, heading investor relations until 2013, when he became chief financial officer of the healthcare business. He was chief financial officer of the healthcare business until 2014. In 2014, Mr. Bhattacharya was appointed as chairman of the project team responsible for the separation of the lighting business from Royal Philips and held this position until 2015. In 2015, Mr. Bhattacharya was appointed as executive vice president and chief financial officer of the lighting business. Subsequently, Mr. Bhattacharya was appointed chief financial officer and executive vice president of Royal Philips.

Frans van Houten

Francois Adrianus van Houten, member of the Supervisory Board and member of the Nomination & Selection Committee, is a Dutch national. Mr. van Houten gained a master's degree in economics and business management at the Erasmus University. He joined Royal Philips in 1986 and held various managerial positions, including co-chief executive officer of the consumer electronics business. From 2004 to 2009, he was chief executive officer at NXP Semiconductors N.V. (formerly Philips Semiconductors). From 2009 to 2010, he led a consultancy practice and was senior advisor to the board of ING Group N.V. In 2011, Mr. van Houten was appointed chief executive officer and chairman of Royal Philips' executive committee and board of management. Since 2011 he is a member of the European Round Table of Industrial Companies. Mr. van Houten holds non-executive board positions in the following non-profit foundations: Erasmus Trustfund, Worldexpo Rotterdam 2025 and NL2025.

Rita Lane

Rita Suganomiya Lane, member of the Supervisory Board and member of the Audit Committee, is a U.S. national. Ms. Lane obtained a bachelor's degree in electrical engineering from the United States Air Force Academy, a master's degree in electrical engineering from Purdue University and a master's degree in business administration from the University of California, Berkeley. She started her career at the United States Air Force as lieutenant in 1984. From 1991 to 2006, Ms. Lane held various managerial positions at International Business Machines Corporation, including vice president integrated supply chain of various divisions. She worked as senior vice president integrated supply chain, chief procurement officer and corporate vice president at Motorola, Inc. in the period 2006 to 2008. In the period 2008 to 2011, she was a member of the board of directors of Out & Equal. From 2008 to 2014, Ms. Lane worked as vice president operations at Apple Inc. In 2010, she became member of the advisory board of Purdue University School of Electrical & Computer Engineering and currently still holds this position. In 2014, Ms. Lane became a supply chain advisor as owner of Hajime, LLC and still holds this position. She became member of the board of directors of Friends of Master Gardeners of Santa Clara County in 2015 and was appointed member of the board of directors of DOTS Devices, Inc. in 2016.

Arthur van der Poel

Arthur Petrus Maria van der Poel, chairman of the Supervisory Board, chairman of the Nomination & Selection Committee and member of the Remuneration Committee, is a Dutch national. Mr. van der Poel obtained a master's degree in telecommunications engineering at Eindhoven University of Technology. Mr. van der Poel joined Royal Philips in 1984 and held various management positions in the consumer integrated circuit business of the semiconductor division. From 1996 to 2001, Mr. van der Poel was the chief executive officer of the semiconductors division. He served as a member of the board of management of Koninklijke Philips Electronics N.V. from 1998 to 2003. He was member of the supervisory Board of P.S.V. N.V. from 1999 until 2011. In 2004, Mr. van der Poel was appointed member of the supervisory board of ASML Holding N.V. and was chairman of the supervisory board from 2007 until April 2016. He was member of the supervisory board of DHV B.V., later named Royal HaskoningDHV B.V. from 2004 until 2014. From 2004 to 2015, he was a member of the board of directors of Axalto that, after the merger with Gemplus in 2006, became Gemalto Holding N.V. In 2012, Mr. van der Poel was appointed member of the supervisory board of BDR Thermea Group B.V. and became chairman of the supervisory board in 2013. Mr van der Poel still holds this position. In January 2016 he was appointed member of the supervisory board of VanderLande Industries Holding B.V. and became chairman of the supervisory board in March 2016 and currently still holds this position.

Source: Philips Lighting IPO Prospectus

Exhibit 17 – Relationship Agreement

Relationship Agreement

On or prior to the Settlement Date, the Company and the Selling Shareholder will enter into the Relationship Agreement. The Relationship Agreement contains certain arrangements regarding the relationship between the Company and the Selling Shareholder. The full text of the Relationship Agreement is available on the Company's website. Below is a summary of the main elements of the Relationship Agreement.

Supervisory Board Nominees

The Selling Shareholder will have the right to propose two Royal Philips Nominees for appointment as members of the Supervisory Board. If the Selling Shareholder nominates a person in accordance with the Relationship Agreement, the Company shall procure that the Supervisory Board shall make a binding nomination of such nominee for appointment as a member of the Supervisory Board to the General Meeting. The Royal Philips Nominee shall be appointed unless the binding nomination is overruled (for more information see "Management, Employees and Corporate Governance"). Initially there shall be two Royal Philips Nominees on the Supervisory Board. As long as the Selling Shareholder's shareholding in the Company equals or exceeds 30% of the issued and outstanding Ordinary Shares, there shall be two Royal Philips Nominees on the Supervisory

Board. Once the Selling Shareholder's holding of the issued and outstanding Ordinary Shares falls below 30% but is equal to or exceeds 15%, there shall be one Royal Philips Nominee on the Supervisory Board as the Selling Shareholder shall procure that one Royal Philips Nominee designated as such by the Selling Shareholder shall resign from its position as member of the Supervisory Board with immediate effect if so requested by the Company. Once the Selling Shareholder's holding falls below 15%, there shall be no Royal Philips Nominee on the Supervisory Board as the Selling Shareholder shall cause all Royal Philips Nominees to resign from their position as members of the Supervisory Board with immediate effect if so requested by the Company.

Duration, termination and governing law

The Relationship Agreement will terminate if and when the Selling Shareholder holds less than 10% of the issued and outstanding Ordinary Shares, except for a limited number of clauses which will not terminate under any circumstances other than by mutual written agreement. The Relationship Agreement may be terminated by mutual agreement of the Company and the Selling Shareholder in writing. The Relationship Agreement is governed by Dutch law.

Source: Philips Lighting IPO Prospectus

Exhibit 18 – "Carved-Out" Income Statement Philips Lighting (2013-2015)

In Millions of EUR except Per Share 12 Months Ending	2013	2014	2015
Revenue	**7,129**	**6,981**	**7,465**
+ Sales & Services Revenue	7,129	6,981	7,465
- Cost of Revenue	4,573	4,671	4,810
+ Cost of Goods & Services	4,573	4,671	4,810
Gross Profit	**2,556**	**2,310**	**2,655**
+ Other Operating Income	31	13	48
- Operating Expenses	2,374	2,282	2,372
+ Selling, General & Admin	1,955	1,880	1,984
+ Selling & Marketing	*1,722*	*1,657*	*1,751*
+ General & Administrative	*233*	*223*	*233*
+ Research & Development	375	395	366
+ Prov For Doubtful Accts	—	—	—
+ Other Operating Expense	44	7	22
Operating Income (Loss)	**213**	**41**	**331**
- Non-Operating (Income) Loss	1	6	8
Pretax Income	**212**	**35**	**323**
- Income Tax Expense (Benefit)	45	66	83
- (Income) Loss from Affiliates	-1	-2	0
Income (Loss) from Cont Ops	**168**	**-29**	**240**
- Net Extraordinary Losses (Gains)	0	0	0
Income (Loss) Incl. MI	**168**	**-29**	**240**
- Minority Interest	0	-7	14
Net Income, GAAP	**168**	**-22**	**226**
- Preferred Dividends	0	0	0
- Other Adjustments	0	0	0
Net Income Avail to Common, GAAP	**168**	**-22**	**226**

Source: Bloomberg

Exhibit 19 – "Carved-Out" Balance Sheet Philips Lighting (2013-2015)

In Millions of EUR except Per Share			
12 Months Ending	**2013**	**2014**	**2015**
Total Assets			
+ Cash, Cash Equivalents & STI	49	75	83
+ Accounts & Notes Receiv	1,302	1,458	1,519
+ Inventories	983	996	988
+ Other ST Assets	163	197	194
Total Current Assets	**2,497**	**2,726**	**2,784**
+ Property, Plant & Equip, Net	830	722	634
+ LT Investments & Receivables	30	33	28
+ Other LT Assets	2,473	2,851	2,997
Total Noncurrent Assets	**3,333**	**3,606**	**3,659**
Total Assets	**5,830**	**6,332**	**6,443**
Liabilities & Shareholders' Equity			
+ Payables & Accruals	1,593	1,555	1,708
+ ST Debt	2	49	86
+ Other ST Liabilities	305	335	396
Total Current Liabilities	**1,900**	**1,939**	**2,190**
+ LT Debt	6	41	2
+ Other LT Liabilities	625	769	635
Total Noncurrent Liabilities	**631**	**810**	**637**
Total Liabilities	**2,531**	**2,749**	**2,827**
+ Preferred Equity and Hybrid Capital	0	0	0
+ Share Capital & APIC	0	0	0
- Treasury Stock	0	0	0
+ Retained Earnings	168	-22	226
+ Other Equity	3,129	3,517	3,287
Equity Before Minority Interest	**3,297**	**3,495**	**3,513**
+ Minority/Non Controlling Interest	2	88	103
Total Equity	**3,299**	**3,583**	**3,616**
Total Liabilities & Equity	**5,830**	**6,332**	**6,443**

Source: Bloomberg [9]

[9] *Other LT Liabilities include pension liabilities, accrued liabilities, deferred revenues, deferred tax liabilities, derivatives & hedging and miscellaneous liabilities*

Exhibit 20 – Philips Lighting Peers Overview

Data from 31/12/2015

(in million euros except share price)	EBITDA	Market Cap	EV	Price	Debt
Acuity Brands Inc	364	9,389	9,017	215	315
Fagerhult AB	54	661	755	6	146
Zhejiang Yankon Group Co	57	1,811	1,671	1	67
Ocean's King Lighting Scie&Tech Co	7	1,587	1,472	3	1
Zumtobel Group AB	91	1,013	1,152	23	216
Thorpe	27	389	339	3	0
Dalian Insulator Group	12	521	551	1	40
Osram Licht AG	543	4,061	3,400	39	112

(in million euros except share price)	EBIT	Earnings	Revenues	Revenue Growth	Beta Levered	Tax Rate
Acuity Brands Inc	325	192	2,337	32.8%	1.44	35%
Fagerhult AB	42	31	418	1.7%	0.99	22%
Zhejiang Yankon Group Co	45	53	607	53.5%	0.48	25%
Ocean's King Lighting Scie&Tech Co	5	10	127	-0.4%		25%
Zumtobel Group AB	24	11	1,357	3.3%	1.30	25%
Thorpe	22	17	119	23.1%	0.30	20%
Dalian Insulator Group	6	5	86	20.5%	0.56	25%
Osram Licht AG	338	166	3,572	-30.5%	0.90	15%

Source: Bloomberg, Reuters, Deloitte

Acuity Brands Inc: North American market leader and one of the world's leading providers of lighting and building management solutions for commercial, institutional, industrial, infrastructure, and residential applications throughout North America and select international markets.

Faegerhult AB: develops, produces and market professional lighting solutions for public environments such as offices, schools, retail areas, industries and hospitals, indoor and outdoor.

Zhejiang Yankon Group Co: Specializes in LED-based commercial lighting, home lighting, office lighting, and outdoor lighting as one of the largest high-tech businesses in China's green lighting industry.

Ocean's King Lighting Scie&Tech Co: China-based company principally engaged in the research, development, manufacture and distribution of specialty environment lightening equipment. The Company's products consist of fixed lightening devices, mobile lightening devices and portable lightening devices.

Zumtobel Group AB: International lighting group and a leading player in the field of innovative lighting solutions and components. In the lighting business the Group with its Thorn, Zumtobel and acdc brands is the European market leader.

Thorpe: Specialise in designing and manufacturing professional lighting equipment. Their products are sold throughout the world.

Dalian Insulator Group: It is a publicly listed "High Tech" company engaged in the research, production and sales of electrical porcelain and composite insulators, station post insulators and porcelain hardware fittings. It is the largest transmission line insulator manufacturing enterprise in China.

Osram Light AG: Osram Licht AG manufactures lights. The Company produces lamps, light-emitting diodes (LEDs), light engines, lighting management systems, specialty lighting, indoor and outdoor LED luminaires, dimmers, and other related lighting products.

Source: Bloomberg

Exhibit 21 – Royal Philips (after IPO) Peers Overview

Data from 31/12/2015

(in million euros except share price)	EBITDA	Market Cap	EV	Price	Debt
Lifco AB-B SHS	135	2,095	2,309	23	262
GN Store Nord	234	2,724	3,020	17	314
Draegerwerk AG & Co	158	1,134	1,271	69	354
Guerbet	87	794	1,082	65	342
Elekta AB	131	3,003	3,294	8	538
Carl Zeiss Meditec AG	150	2,321	2,363	29	13
Comet Holding AG	33	518	516	67	20
Osram Light AG	543	4,061	3,400	39	112
Alimak Group AB	43	403	407	9	89
Alfa Laval AB	798	7,073	8,368	17	1,597

(in million euros except share price)	EBIT	Earnings	Revenues	Revenue Growth	Beta Levered	Tax Rate
Lifco AB-B SHS	118	87	844	12.9%		22%
GN Store Nord	154	108	1,040	5.6%	0.80	24%
Draegerwerk AG & Co	73	25	2,609	7.2%	0.77	15%
Guerbet	58	39	489	19.5%	0.50	33%
Elekta AB	63	15	1,203	2.7%	0.96	22%
Carl Zeiss Meditec AG	131	62	1,040	14.4%	0.41	15%
Comet Holding AG	24	16	264	11.5%	1.27	9%
Osram Light AG	338	166	3,572	-30.5%	0.90	15%
Alimak Group AB	37	14	218	13.6%		22%
Alfa Laval AB	610	410	4,248	10.2%	1.12	22%

Source: Bloomberg, Reuters, Deloitte

Lifco AB-B SHS: Lifco's business idea is to acquire and develop market leading, niched companies. Our aim is to secure that the subsidiaries continuously improve earnings and deliver strong cash flows.

GN Store Nord: The GN Group is a global leader in intelligent audio solutions that let you hear more, do more and be more than you ever thought possible. Our unique portfolio of medical, professional & consumer audio solutions – and the deep research & development expertise behind this range of products gives our brands unprecedented advantages in the med-tech, hearables and intelligent audio field.

Draegerwerk AG & Co: Draegerwerk AG & Company KGAA manufactures medical, safety, and aerospace equipment. The Company produces ventilators, monitoring equipment, transport incubators, anesthesia machines, surgical lights, ward equipment, home care equipment, systems for safe breathing in industry, mining and firefighting, and airplane crew and passenger oxygen systems.

Guerbet: Guerbet's men and women are committed to offering health professionals contrast agents, medical devices and innovative solutions indispensable to diagnostic and interventional imaging to improve patients' prognosis and quality of life.

Elekta AB: Elekta is proud to be the leading innovator of equipment and software used to improve, prolong and save the lives of people with cancer and brain disorders. Our treatment solutions and oncology informatics portfolios are designed to enhance the delivery of radiation therapy, radiosurgery and brachytherapy, and to drive cost efficiency in clinical workflows.

Carl Zeiss Meditec AG: Our aim is to contribute to progress in medical technology and help healthcare professionals improve their patients' quality of life. Through cutting-edge innovations and clinically-relevant software solutions, we support healthcare professionals in setting new standards of care in ophthalmology/optometry; neuro, ENT, spine, dental and gynecologic surgery; and intraoperative radiotherapy.

Comet Holding AG: The COMET Group is a globally leading Swiss technology firm. For nearly 70 years, we have been developing and producing innovative high-tech components and systems based on x-ray, radio frequency and ebeam technology. Consistently able to take advantage of global trends and developments, we grow continually.

Osram Light AG: Osram Licht AG manufactures lights. The Company produces lamps, light-emitting diodes (LEDs), light engines, lighting management systems, specialty lighting, indoor and outdoor LED luminaires, dimmers, and other related lighting products.

Alimak Group AB: he Group has been a pioneer and an industry leader in supplying elevators, hoists and work platforms based on rack-and-pinion technology for almost 70 years. Alimak has a broad and competitive product range of vertical access solutions, such as hoists, elevators and building maintenance units (BMU´s).

Alfa Laval AB: Alfa Laval is today a world leader within the key technology areas of heat transfer, separation and fluid handling. Our company was founded on a single brilliant invention and innovation remains at the heart of everything we do.

Source: Bloomberg

Exhibit 22 – Royal Philips (before IPO) Peers Overview

Data from 31/12/2015

(in million euros except share price)	EBITDA	Market Cap	EV	Price	Debt
Siemens AG	8,590	79,184	97,296	90	31,127
General Electric Co	10,788	270,559	389,906	29	181,853
3M Co	7,556	85,359	93,560	139	9,936
ABB Ltd	3,803	38,487	40,089	17	6,818
Atlas Copco AB	2,604	27,323	28,824	23	2,501
Fanuc Corp	1,787	32,989	26,718	160	0
Schneider Electric SE	3,206	30,886	35,708	53	7,549
Emerson Electric Co	3,977	28,672	32,200	44	6,118
Kone Corp	1,342	20,580	20,305	39	237
Roper Technologies Inc.	1,111	17,607	19,901	175	3,011
LG Electronics	2,490	6,849	12,617	42	6,867
Motorola Solutions Inc	1,031	11,122	13,312	63	4,002
Samsung Electronics Co Ltd	37,724	144,376	97,197	980	10,015

(in million euros except share price)	EBIT	Earnings	Revenues	Revenue Growth	Beta Levered	Tax Rate
Siemens AG	6,041	7,282	75,636	6.2%	1.04	15%
General Electric Co	8,426	-5,523	103,816	18.3%	1.07	35%
3M Co	6,262	4,357	27,292	13.8%	1.09	35%
ABB Ltd	2,758	1,742	31,974	6.5%	1.06	9%
Atlas Copco AB	2,139	1,252	10,578	2.7%	1.22	22%
Fanuc Corp	1,628	1,206	4,707	-10.6%	0.79	24%
Schneider Electric SE	2,229	1,407	26,640	6.8%	1.24	33%
Emerson Electric Co	3,476	2,366	14,186	8.5%	1.24	35%
Kone Corp	1,242	1,032	8,647	17.9%	0.83	20%
Roper Technologies Inc.	927	628	3,230	20.7%	1.06	35%
LG Electronics	950	99	45,026	6.6%	0.94	22%
Motorola Solutions Inc	896	550	5,134	15.8%	0.35	35%
Samsung Electronics Co Ltd	21,046	14,896	159,880	8.3%	1.47	22%

Source: Bloomberg, Reuters, Deloitte

Siemens AG: Siemens is a global powerhouse focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of systems for power generation and transmission as well as medical diagnosis. In infrastructure and industry solutions the company plays a pioneering role.

General Electric Co: General Electric Company is a globally diversified technology and financial services company. The Company's products and services include aircraft engines, power generation, water processing, and household appliances to medical imaging, business and consumer financing, and industrial products.

3M Co: 3M Company conducts operations in electronics, telecommunications, industrial, consumer and office, health care, safety, and other markets. The Company businesses share technologies, manufacturing operations, marketing channels, and other resources. 3M serves customers worldwide.

ABB Ltd: ABB Limited provides power and automation technologies. The Company operates under segments that include power products, power systems, automation products, process automation, and robotics.

Atlas Copco AB: Atlas Copco AB is an international industrial group. The Company develops, manufactures, and markets compressed air equipment and treatment, vacuum solutions, mining equipment, generators, electric and

pneumatic tools, and hybrid joining technologies and other assembly systems, as well as offers related equipment and services.

Fanuc Corp: FANUC Corporation manufactures factory automation (FA) systems, equipments, and robots. The Company's products include computerized numerically-controlled (CNC) equipment, servo motors, laser systems, industrial robots, wire-cut electric discharge machines, and CNC drill.

Schneider Electric SE: Schneider Electric SE manufactures power distribution and automation systems. The Company produces circuit breakers, remote installation management equipment, panelboards, programmable logic controllers, industrial control products, detectors, human-machine interfaces, and process controls. Schneider's products are sold various brands.

Emerson Electric Co: Emerson Electric Co. designs and manufactures electronic and electrical equipment, software, systems, and services. The Company offers its products for industrial, commercial, and consumer markets worldwide through its network power, process management, industrial automation, climate technologies, and commercial and residential solutions divisions.

Kone Corp: KONE, Inc. designs, manufactures, and supplies elevators, escalators, autowalks, and automatic building doors. The company offers passenger, patient/service, freight, marine, and trauma elevators; and loading docks, automated guided vehicles, and destination control systems. It also provides maintenance and modernization solutions, and repairs and upgrades.

Roper Technologies Inc: Roper Technologies, Inc. manufactures and distributes industrial equipment. The Company offers industrial controls, fluid handling, pumps, medical and scientific devices, analytical instrumentation products, radio frequency identification (RFID) communication technology, and software solutions.

LG Electronics: LG Electronics Inc. manufactures and markets digital display equipment and home appliances. The Company produces and markets flat panel televisions, A/V products, washing machines, air conditioners and refrigerators as well as telecommunications equipment such as smart phones and tablets.

Motorola Solutions Inc: Motorola Solutions, Inc. is a data communications and telecommunications equipment provider. The Company develops data capture, wireless, infrastructure, bar code scanning, two-way radios, and wireless broadband networks. Motorola also produces public safety and government products, voice and data communications products and systems, and wireless LAN securities.

Samsung Electronics Co Ltd: Samsung Electronics Co., Ltd. manufactures a wide range of consumer and industrial electronic equipment and products such as semiconductors, personal computers, peripherals, monitors, televisions, and home appliances including air conditioners and microwave ovens. The Company also produces Internet access network systems and telecommunications equipment including mobile phones.

Source: Bloomberg

Exhibit 23 – "Carved-Out" Cash Flow Statement Philips Lighting (2013-2015)

In Millions of EUR except Per Share 12 Months Ending	2013	2014	2015
Cash from Operating Activities			
+ Net Income	168	-22	226
+ Depreciation & Amortization	390	381	315
+ Non-Cash Items	-62	152	-33
+ Chg in Non-Cash Work Cap	-232	-34	209
+ Net Cash From Disc Ops	0	0	0
Cash from Operating Activities	**264**	**477**	**717**
Cash from Investing Activities			
+ Change in Fixed & Intang	-178	-123	-85
+ Net Change in LT Investment	0	0	0
+ Net Cash From Acq & Div	0	-125	-11
+ Other Investing Activities	0	0	31
+ Net Cash From Disc Ops	0	0	0
Cash from Investing Activities	**-178**	**-248**	**-65**
Cash from Financing Activities			
+ Dividends Paid	0	0	0
+ Cash From (Repayment) Debt	-2	-1	-12
+ Cash (Repurchase) of Equity	-95	-200	-626
+ Other Financing Activities	0	0	0
+ Net Cash From Disc Ops	0	0	0
Cash from Financing Activities	**-97**	**-201**	**-638**

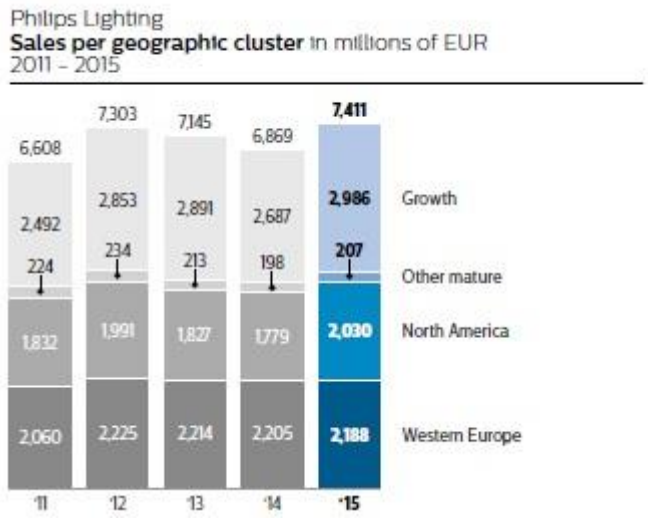
Source: Bloomberg

Exhibit 24 – By Measure Philips Lighting (2013-2015)

In Millions of EUR except Per Share						
12 Months Ending	**2013**		**2014**		**2015**	
Revenue	**7,129**	**100%**	**6,981**	**100%**	**7,465**	**100%**
BG Professional	2,301	32%	2,407	35%	2,732	37%
BG Lamps	3,557	50%	3,119	45%	2,850	38%
BG LED	772	11%	958	14%	1,334	18%
BG Home	490	7%	482	7%	513	7%
Others	9		15		36	
EBITDA	**603**	**100%**	**422**	**100%**	**646**	**100%**
BG Lamps	690	99%	474	92%	492	72%
BG Professional	80	12%	93	18%	169	25%
BG LED	-1	0%	11	2%	86	13%
Others	-92		-96		-42	
BG Home	-74	-11%	-60	-12%	-59	-9%
Operating Margin	**—**		**—**		**—**	
BG Lamps	18		13		16	
BG LED	0		-5		6	
BG Professional	1		1		4	
BG Home	-28		-12		-10	
Organic Growth	**—**		**—**		**—**	
BG LED	—		26		27	
BG Home	—		0		0	
BG Professional	—		3		-1	
BG Lamps	—		-10		-16	
Restructuring Charges	**79**	**100%**	**261**	**100%**	**90**	**100%**
BG Professional	22	29%	41	18%	26	28%
BG Lamps	21	28%	154	69%	52	55%
BG Home	33	43%	22	10%	14	15%
BG LED	0		5	2%	2	2%
Others	3		39		-4	
Capital Expenditures	**-159**		**-109**		**-98**	
Others	-42		-23		-10	
BG Home	-4	3%	-6	7%	-11	13%
BG LED	-15	13%	-12	14%	-16	18%
BG Professional	-52	44%	-30	35%	-29	33%
BG Lamps	-46	39%	-38	44%	-32	36%

Source: Bloomberg

Exhibit 25 – Philips Lighting Sales per geographic cluster (2011-2015)



Source: Royal Philips Annual Report 2015

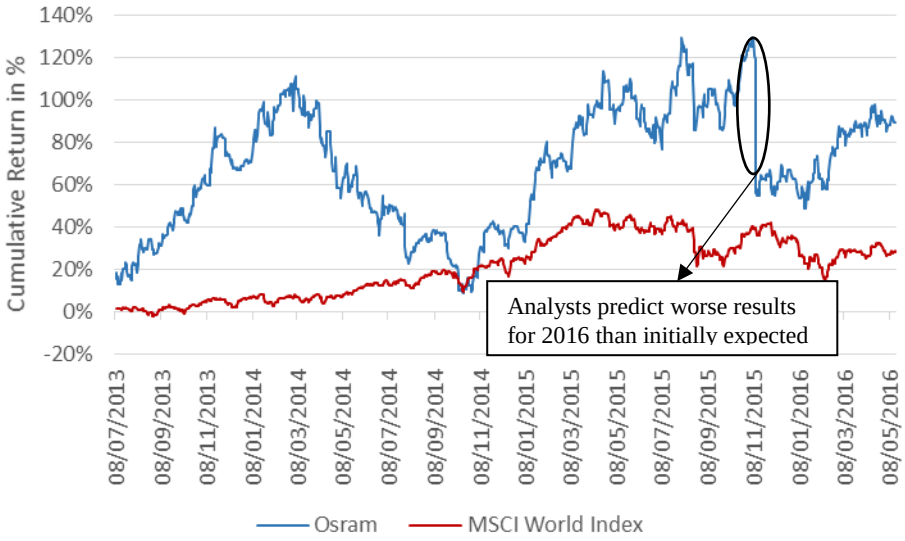
Exhibit 26 – Lighting Market M&A deals

(in USD millions)

Date	Target	Target Description	Buyer	Size	EV/EBITDA
May-16	TNT Energy, LLC	Turnkey services provider in lighting controls, addressing energy savings projects within the commercial, industrial, hospitality, retail, education, and municipal sectors. Lighting portfolio includes recessed, linear suspended, asymetric, surface (ceiling), surface (wall),pendant, and perimeter lighting products as well as LED lighting products	Revolution Lighting Technologies, Inc.	$15	6.56
Mar-16	Fluxwerx Illumination Inc.	Manufactures architectural LED lighting products for commercial and institutional spaces, such as office, education, and healthcare	Lumenpulse Inc.	$48	11.48
Dec-15	Juno Lighting, LLC	Manufactures lighting fixtures and related products	Acuity Brands Lighting, Inc.	$385	12.03
Dec-15	Exenia S.r.l.	Manufactures lighting fixtures for residential customers, shops, showrooms, and galleries. Products include suspensions, ceiling lamps, wall lamps, systems projectors, downlights, and opal lighting	Lumenpulse Inc.	$12	8.63

Source: Brown Gibbons Lang & Company "Spotlight on LED", May 2016

Exhibit 27 – Osram Stock Performance (2013-2016)



Source: Bloomberg

Teaching Notes Appendix

TN Exhibit 1 – WACC and ROIC calculations

WACC and ROIC calculations

Royal Philips

WACC

Beta	1.44
Risk -Free	1.30%
MKT Risk Premium	5.90%
Corporate Taxes	38.40%

Re= rf+Beta*MRP

Re	9.80%
Rd	2.90%

$$WACC = \frac{E}{D+E}(r_e) + \frac{D}{D+E}(r_d)(1-t)$$

Where:
E = market value of equity
D = market value of debt
r_e = cost of equity
r_d = cost of debt
t = corporate tax rate

Market Value of Equity

Shares Outstanding*Share Price	€ 21,606,970,240

Market Value of Debt

Book Value of Debt (interest bearing)	€ 5,760,000,000
Interest Expenses (Coupon)	€ 271,000,000
Average Maturity (t)	12.41

Market Value of Debt = C *((1-1/(1+Rd)^t)/Rd)+(Book Debt/(1+Rd)^t)

Market Value of Debt	€ 6,830,601,607

WACC	7.87%

Ru Comparison to WACC (the alternative method)

B unlevered -> Weighted average by market cap of all the unlevered betas of the competitors

Calculate the unlevered betas

Bu = BL/(1+(1-Tc)*(D/E))

Assumed to be in market values

Data from 31/12/2015

(in million euros except share price)	Beta Levered	Tax Rate	Debt	Market Cap	Beta Unlevered
Siemens AG	1.04	15%	31,127	79,184	0.78
General Electric Co	1.07	35%	181,853	270,559	0.74
3M Co	1.09	35%	9,936	85,359	1.01
ABB Ltd	1.06	9%	6,818	38,487	0.91
Atlas Copco AB	1.22	22%	2,501	27,323	1.14
Fanuc Corp	0.79	24%	0	32,989	0.79
Schneider Electric SE	1.24	33%	7,549	30,886	1.07
Emerson Electric Co	1.24	35%	6,118	28,672	1.09
Kone Corp	0.83	20%	237	20,580	0.82
Roper Technologies Inc.	1.06	35%	3,011	17,607	0.95
LG Electronics	0.94	22%	6,867	6,849	0.53
Motorola Solutions Inc	0.35	35%	4,002	11,122	0.28
Samsung Electronics Co Ltd	1.47	22%	10,015	144,376	1.39

Bu	0.94
Ru = Rf+Bu*MRP	6.86%

Alternative WACC formula through Ru:

WACC = Ru*(1-Tc*D/(D+E)) → WACC 6.23%

ROIC (values in €millions)

ROIC = (Op. Income*(1-t))/(NWCR+Fixed Assets)

NWCR= Op. Assets-Op. Liabilities

Operating Income	€ 1,111
Op. Assets	€ 12,693
Op. Liabilities	€ 8,403
Fixed Assets	€ 18,283
ROIC	3.03%

Philips Lighting

WACC

Data from 31/12/2015

(in million euros except share price)	Beta Levered	Tax Rate	Debt	Market Cap	Beta Unlevered
Acuity Brands Inc	1.44	35%	315	9,389	1.41
Fagerhult AB	0.99	22%	146	661	0.84
Zhejiang Yankon Group Co	0.48	25%	67	1,811	0.47
Osram Licht AG	0.90	15%	112	4,061	0.88
Zumtobel Group AB	1.30	25%	216	1,013	1.12
Thorpe	0.30	20%	0	389	0.30
Dalian Insulator Group	0.56	25%	40	521	0.53
Ocean's King Lighting Scie&Tech Co		25%	1	1,587	

Corporate Taxes	38.40%
Bu	1.11

BL = Bu*(1+(1-Tc)*(D/E))

Equity

To reach market value, one assumes the average value the IPO Prospectus was valuing Philips Lighting

Share price	€ 20.50
# Shares Outstanding	150,000,000
Market Value of Equity	€ 3,075,000,000

Debt

Rd	2.90%

Market Value of Debt

Book Value of Debt (interest bearing)	€ 88,000,000
Interest Expenses (Coupon)	€ 5,000,000
Average Maturity (t)	1.26

Market Value of Debt = C *((1-1/(1+Rd)^t)/Rd)+(Book Debt/(1+Rd)^t)

Market Value of Debt	€ 90,975,595

As one already has D and E, it is now possible to find BL

BL	1.13

Re	7.94%
WACC	7.77%

ROIC (values in €millions)

ROIC = (Op. Income*(1-t))/(NWCR+Fixed Assets)

NWCR= Op. Assets-Op. Liabilities

Operating Income	€ 195
Op. Assets	€ 2,784
Op. Liabilities	€ 2,104
Fixed Assets	€ 3,659
ROIC	2.77%

Philips Healthtech

WACC

Data from 31/12/2015

(in million euros except share price)	Beta Levered	Tax Rate	Debt	Market Cap	Beta Unlevered
GN Store Nord	0.80	24%	314	2,724	0.74
Draegerwerk AG & Co	0.77	15%	354	1,134	0.61
Guerbet	0.50	33%	342	794	0.39
Elekta AB	0.96	22%	538	3,003	0.84
Carl Zeiss Meditec AG	0.41	15%	13	2,321	0.41
Comet Holding AG	1.27	9%	20	518	1.23
Osram Light AG	0.90	15%	112	4,061	0.88
Alfa Laval AB	1.12	22%	1,597	7,073	0.95
Alimak Group AB		22%	89	403	
Lifco AB-B SHS		22%	262	2,095	

Corporate Taxes	38.40%
Bu	0.81

BL = Bu*(1+(1-Tc)*(D/E))

Equity

To reach the Market Value of Equity, it will be assumed the difference between Royal Philips and Philips Lighting. Until now, it is assumed no conglomerate discount.

Market Value of Equity	€ 18,531,970,240

Debt	
Rd	2.90%

It is going to be assumed the same assumption as used in Equity

Market Value of Debt	€ 6,739,626,012

As one already has D and E, it is now possible to find BL

BL	0.99
↓	
Re	7.12%
WACC	5.69%

ROIC (values in €millions)

ROIC = (Op. Income*(1-t))/(NWCR+Fixed Assets)

NWCR= Op. Assets-Op. Liabilities

Operating Income	€ 683
Op. Assets	€ 9,909
Op. Liabilities	€ 6,299
Fixed Assets	€ 14,624
ROIC	2.31%

TN Exhibit 2 – Philips Lighting Comparable Multiples

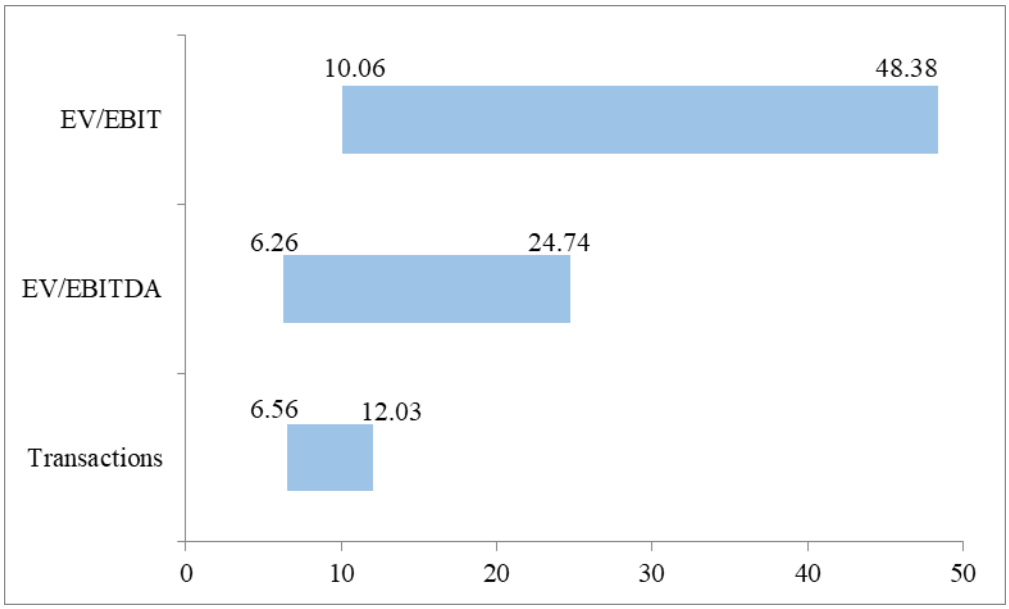
Data from 31/12/2015

(in million euros except share price)	EBITDA	Market Cap	EBIT	EV	Price	Earnings	Sales
Acuity Brands Inc	364	9,389	325	9,017	215	192	2,337
Zumtobel Group AB	91	1,013	24	1,152	23	11	1,357
Osram Licht AG	543	4,061	338	3,400	39	166	3,572

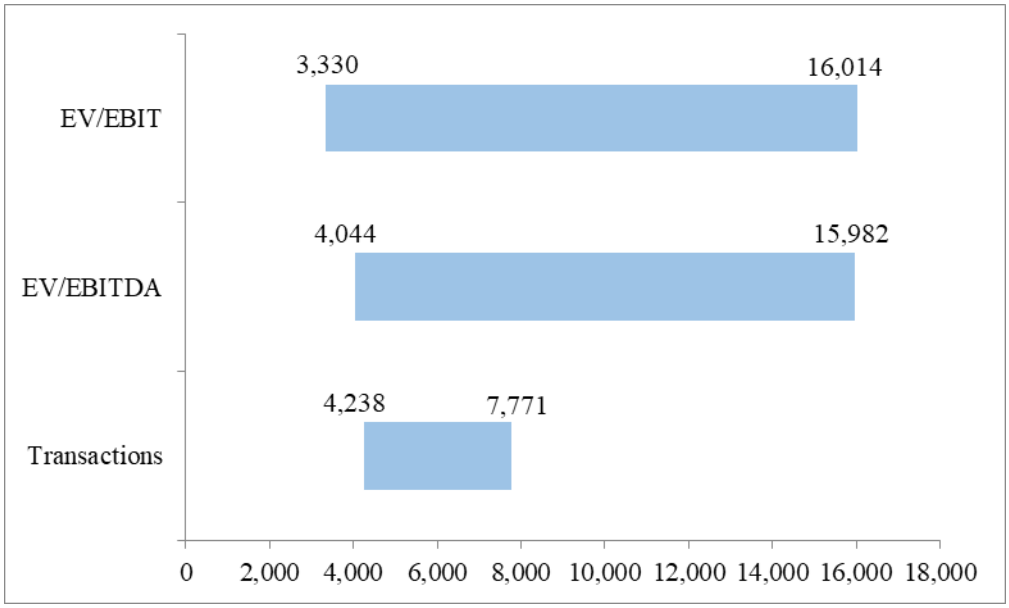
(in million euros except share price)	EV/EBIT	EV/Sales	EV/EBITDA	P/E
Acuity Brands Inc	27.75	3.86	24.74	48.96
Zumtobel Group AB	48.38	0.85	12.61	89.09
Osram Licht AG	10.06	0.95	6.26	24.46

TN Exhibit 3 – Philips Lighting Football Field Valuation

Multiples Range



Market Capitalization Range (in million€)



TN Exhibit 4 – Philips Healthtech Comparable Multiples

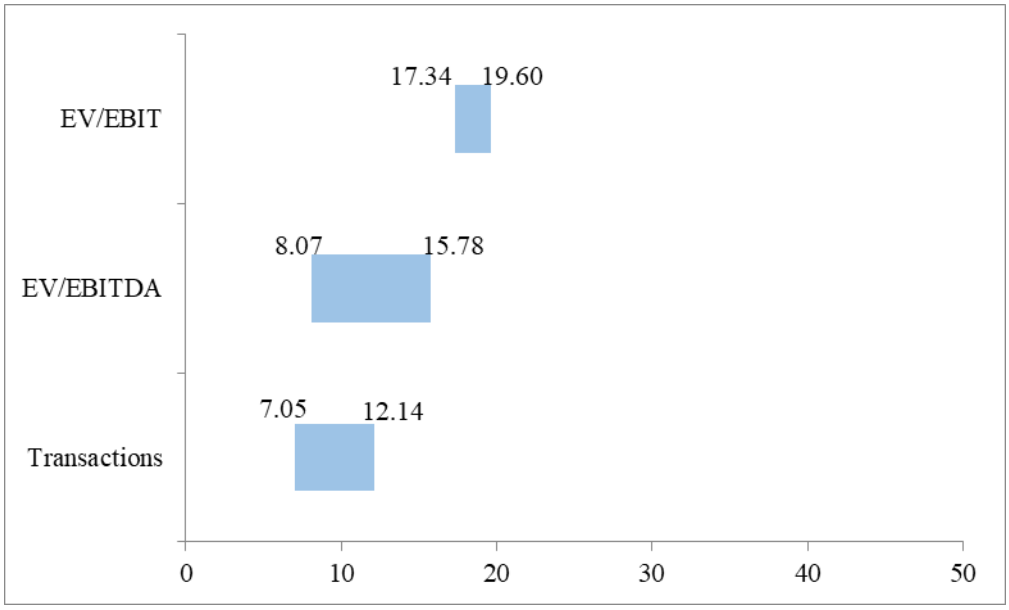
Data from 31/12/2015

(in million euros except share price)	EBITDA	Market Cap	EBIT	EV	Price	Earnings	Sales
GN Store Nord	234	2,724	154	3,020	17	108	1,040
Draegerwerk AG & Co	158	1,134	73	1,271	69	25	2,609
Carl Zeiss Meditec AG	150	2,321	131	2,363	29	62	1,040

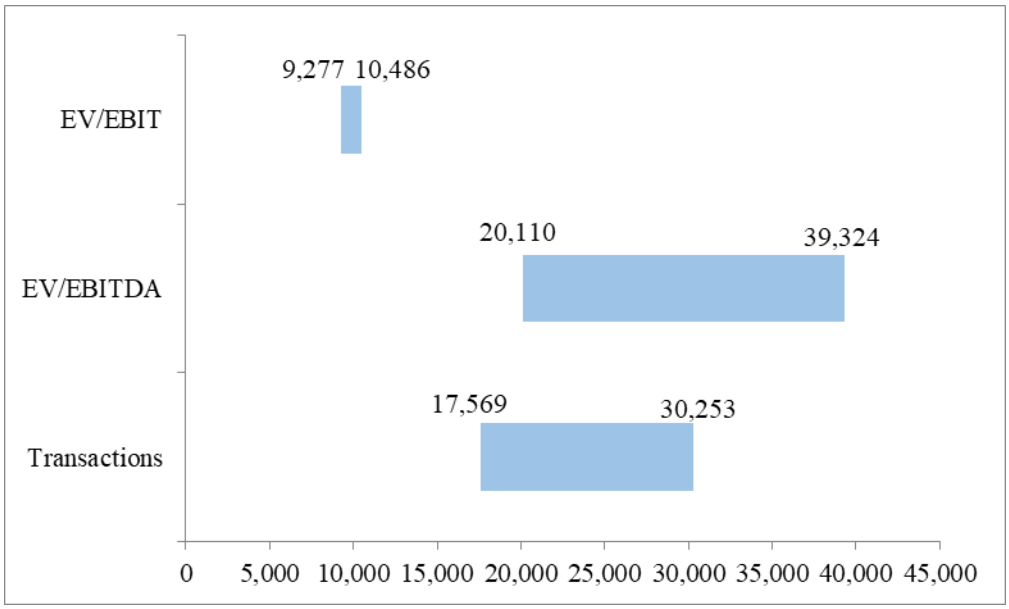
(in million euros except share price)	EV/EBIT	EV/Sales	EV/EBITDA	P/E
GN Store Nord	19.60	2.90	12.89	25.23
Draegerwerk AG & Co	17.34	0.49	8.07	45.29
Carl Zeiss Meditec AG	18.09	2.27	15.78	37.26

TN Exhibit 5 – Philips Healthcare Football Field Valuation

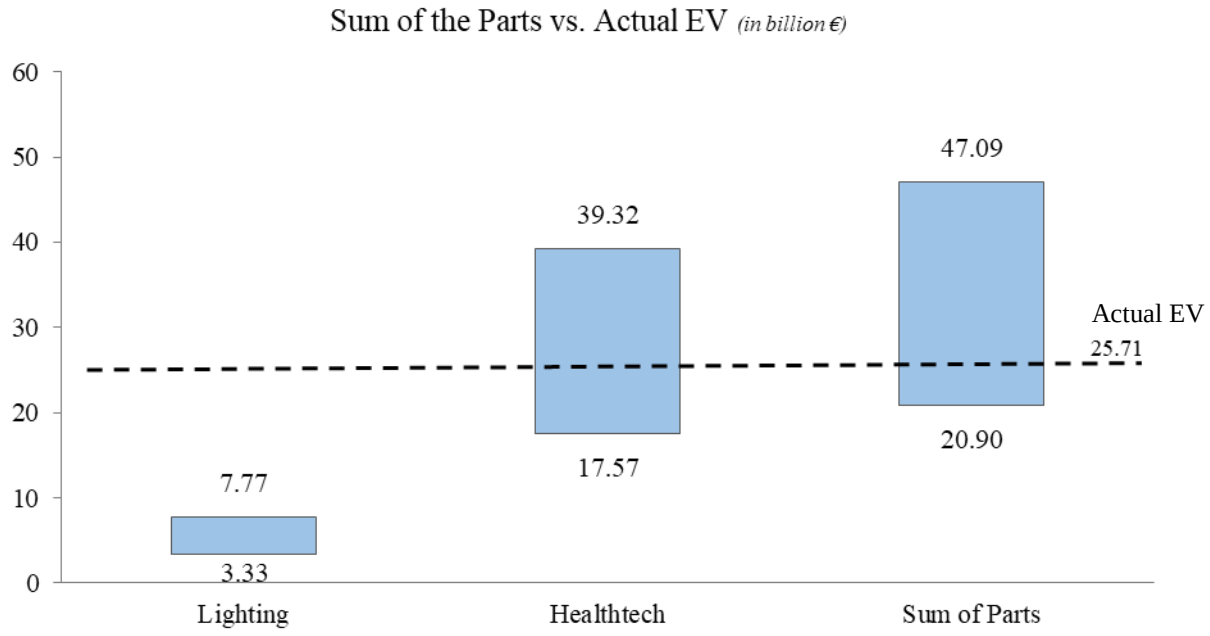
Multiples Range



Market Capitalization Range (in million€)



TN Exhibit 6 – Sum of the Parts



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